C8450-1-U

June 25, 1985

Wheat Good for Life

Milling & Baking News

Volume 64 Number 17

Fifty-Five Dollars Per Year

Jorge Born details Bunge philosophy

NEW YORK, June 24. — In the global grain and grain processing business, each of the major companies brings a different style, culture and business philosophy to the current difficult economic environment. Yet, if one company may be described as "more different" from its peers, that description would probably best be applied to the Bunge Group. Based on an interview recently in New York with

SPECIAL INTERVIEW
by the editors of
Milling & Baking News

Jorge Born, managing director of this huge globe-circling enterprise, an observer could conclude that the Bunge Group has pursued a course in recent years that has positioned it better to grow and prosper under present-day conditions than many, if not most, of its competitors.

And, while Mr. Born acknowledged the

(Continued on Page 39.)

COMMENT

Census details baking changes

One of the breadstuffs industry's most important documents of this decade, the 1982 Census of Manufactures for the Bread, Cake and Related Products Industry, is analyzed and interpreted in a 24-page special section in this issue of *Milling & Baking News*.

The comprehensive analysis is meant to be an invaluable management and planning tool to help baking executives judge the performance of their companies in comparison with the industry during the volatile 1977-82 period. Bakers may also project the impact of these industry changes and trends into the difficult years ahead. The report offers fascinating insights into the evolution of the industry — its production gains, which segments modernized the most, the number and size of bakeries as consolidation continued, trends and even reversals in the mix of products, value added to those products, pricing, and diversification into secondary products.

This is the first of several analyses of the just-issued Census of Manufactures for baking and milling that are planned for publication this summer. Breadstuffs managers should want to devote considerable thought to each of these, describing the past and looking to the future.

On the Inside . . .

New flour usage peak..... 9

Total consumption of wheat flour in U.S. in calendar 1984 totaled record 278.7 million cwts, according to Economic Research Service, up 3% from previous year. Per capita consumption reaches 118 lbs, compared with 116 lbs in 1983.

Baking co-op merger?. 102

Officers and staff executives of three cooperatives cite advantages and disadvantages in mutual assistance efforts or merger; emphasize issue has been discussed for many years without action.

Soybean oil easy 17

Confirmation of two cargoes en route from Argentina to the U.S. and expectations of imports from Brazil contribute to continued weakness in soybean oil prices. Imports hardly significant for supply and demand balance but provide "negative psychological effects."

Late News.....112

Begins on Page 69

BAKING CENSUS REPORT

Weekly Journal for Breadstuffs Managers

Pages 1-A — 24-A

BAKING CENSUS REPORT

Milling & Baking News

Busch Industrial Products Corporation

ONE OF THE ANHEUSER-BUSCH COMPANIES

Stability marks bread and cake baking

A continuation of many long-time trends in the baking business; establishment of new directions and outright reversals of other patterns are all reflected in the 1982 Census of Manufactures for the Bread, Cake and Related Products Industry. While the five years between 1977 and 1982 witnessed many changes in size, structure, products and ingredients, in comparison to the 1972-77 Census period, the latest intercensual period also was one of relative stability for the larger wholesale plants. These plants continue as the nucleus of wholesale baking as well as of the Bread, Cake and Related Products Industry.

Stability is underscored in the 1982 Census findings of increased share of market for the larger wholesale plants, little change in their numbers, and a poundage production gain of almost 3% for the overall Bread, Cake and Related Products Industry.

Total value of shipments for 2,305 establishments classified in the Bread, Cake and Related Products Industry in 1982 was $13,143.3 million, up 42% from $9,274.9 million in 1977 and more than double the 1972 total of $6,152.6 million. The value of shipments figure includes products classified as primary to the industry, products designated as secondary to the industry, and miscellaneous receipts, including resales.

Value of shipment figures are at prices current for the year specified and are not adjusted for changes in price levels. When adjusted for relative inflation, the 42% gain in value of 1982 shipments over 1977 is not that much less, if at all, than the 51% gain in 1977 over 1972. During the 1972-77 period, manufacturing among geographic areas," again increased at a greater rate than value of shipments. Value added in the Bread, Cake and Related Products Industry in 1982 amounted to $7,861.1 million, up 46% from $5,370.4 million in 1977. The 1977 total, in turn, was up 53% from $3,518.1 million in 1972.

According to the Bureau of the Census, value added is derived "by subtracting the cost of materials, supplies, containers, fuel, purchased electricity and contract work from the value of shipments. The result of this calculation is adjusted by the addition of value added by merchandising operations plus the net change in finished goods and work-in-process between the beginning and end-of-year inventories."

Although the Bureau cautions in its final reports that value added for 1982 is not strictly comparable to prior-year data because of a change in instructions for reporting inventories for 1982, value added figures estimated by the Census Bureau on a basis comparable to the historical data indicates that the differ-

Baking Census at a glance. . .

Larger plants increase market share to 86% ..... Page 6-A

Bread-type rolls pace 3% climb in production ..... Page 9-A

Sweet goods lead gains in average price per lb ..... Page 16-A

Shifts in state product shipment rankings continue ..... Page 17-A

Capital expenditures up 36%, larger share for structures ..... Page 20-A

New detail on ingredient usage; flour consumption down ..... Page 21-A

of variety bread, hamburger buns and bread-type rolls, and decreasing production of white pan bread. At the same time, a few reversals also are noted of some product trends of the past decade.

While changes in product classifications and in the manner in which the Census lists product totals greatly complicate comparisons of 1982 production with 1977 and earlier Census years, total shipments of bread, cake and roll products, on the basis of 1982 product categories, increased 2.7% from 1977.

That performance can be attributed to a slowing in the rate of decrease in white bread production, continued gains in shipments of most variety loaves and strong increases in bread-type rolls.

Production of Bread, Cake and Related Products by all plants — those designated in Standard Industrial Classification 2051 as well as those classified in other industries — totaled 17,405,000,000 lbs in 1982. That is up 465 million lbs from the aggregate of 16,940,000,000 lbs in 1977. While the 1982 and dustry in both poundage and dollar value, but its share of the total market continued to slip. White bread represented 37% of total product poundage in 1982, compared with 41% in 1977 and 48% in 1972. On the basis of value of shipments, white bread accounted for 24% of total shipments in 1982, compared with 28% in 1977 and 33% in 1972.

In variety bread, "whole wheat, cracked wheat, multigrain and other dark bread" led production gains in 1982. Shipments of this category totaled 1,956.1 million lbs in 1982, a gain of 686.1 million, or 54%, from 1,270.2 million in 1977 and up 151% from 777.7 million in 1972.

At the same time, a significant slowing occurred in the rate of gain in shipments of white hearth bread, including French and Italian. Shipments of bread in this category in 1982 amounted to 918.8 million lbs, up 38.9 million lbs, or only 4%, from 1977. That gain contrasts with a 60% expansion in the 1972-77 period.

Strong showing by rolls

In marked contrast to the 1.4% decrease in shipments of bread in 1982 was a 15% gain in shipments of bread-type rolls in the 1977-82 period. Bread-type roll shipments in 1982 aggregated 4,472.7 million lbs, up 593.1 million lbs from 3,879.6 million lbs in 1977.

All six product lines in the bread-type rolls group posted poundage gains in the 1977-82 period, led by hearth rolls and the "other bread-type rolls" segment, which includes Kaiser rolls and bagels.

The Census report confirms a mixed

the Producer Price Index for Bakery Products rose 58%; in the 1977-82 period, the same index rose 47%. That 11-percentage-point difference is identical to the difference in value-of-shipment gains for the two periods.

Value added again positive

Value added by manufacture, judged by the Bureau of the Census as "the best value measure available for comparing the relative economic importance of

ence is minor indeed. For the Bread, Cake and Related Products Industry, the value added total on a basis comparable to previous Census studies is $7,861.7 million, or a difference of only $600,000 from the not-comparable total.

Interruption of trends

The Census report for the most part confirms the continuation of product trends which had their start in the early 1960's, including increasing production

1977 totals are not fully comparable to earlier years, on the basis of 1982 product classifications comparable 1972 production was 17,097,400,000 lbs, or 2% less than in 1982.

Bread decline is smaller

All bread production in 1982 was down 1.4% in pounds from 1977, a marked slowing from the 5% drop noted between 1972 and 1977. White bread remained as the leading product of the Bread, Cake and Related Products In-

performance for sweet goods, with 1982 poundage increasing in snack cakes, "other pies" and cake donuts from 1977 levels, and decreasing in yeast donuts, other sweet yeast goods, fruit cakes and snack pies.

Little change in market share

The 1982 Census suggests only a small change in the share-of-market battle between the two major segments of the Bread, Cake and Related Products

Historical statistics for bread, cake industry

Year[1]	Companies[2] (no.)	All establishments[3] Total (no.)	All establishments[3] With 20 employees or more (no.)	All employees Number (1,000)	All employees Payroll (million dollars)	Production workers Number (1,000)	Production workers Hours (millions)	Production workers Wages (million dollars)	Value added by manufacture[4] (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories[4] (million dollars)	Ratios Specialization (percent)	Ratios Coverage (percent)
	INDUSTRY 2051, BREAD, CAKE, AND RELATED PRODUCTS														
1982 Census	1 869	2 305	1 074	170.7	3 249.6	88.9	175.1	1 520.1	7 861.1	5 282.7	13 143.3	382.4	305.7	97	96
1981 ASM	(NA)	(NA)	(NA)	176.1	3 087.3	97.5	198.0	1 494.4	7 218.5	5 279.7	12 493.6	267.8	309.5	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	181.9	2 923.7	101.9	204.5	1 407.9	6 726.5	4 978.1	11 703.1	288.6	299.1	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	184.4	2 730.2	101.9	203.5	1 318.3	6 224.5	4 515.3	10 737.7	290.4	281.5	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	179.2	2 572.2	96.0	189.5	1 251.7	5 686.5	4 133.8	9 817.3	324.3	251.7	(NA)	(NA)
1977 Census	2 549	3 062	1 117	178.0	2 335.8	97.4	191.7	1 152.8	5 370.4	3 909.0	9 274.9	280.4	235.1	99	98
1976 ASM	(NA)	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	191.4	1 799.5	109.7	218.4	917.9	3 599.7	3 085.0	6 679.7	143.8	173.4	(NA)	(NA)
1972 Census	2 801	3 323	1 379	193.5	1 692.2	109.6	219.3	876.2	3 518.1	2 615.0	6 132.0	170.6	137.9	98	99
1971 ASM	(NA)	(NA)	(NA)	195.7	1 633.8	111.0	223.2	831.8	3 208.8	2 507.1	5 716.7	169.2	131.6	(NA)	(NA)
1970 ASM	(NA)	(NA)	(NA)	202.9	1 572.2	117.0	235.1	792.1	3 090.5	2 459.8	5 549.0	149.5	141.6	(NA)	(NA)
1969 ASM	(NA)	(NA)	(NA)	221.0	1 548.7	126.2	255.4	780.9	3 041.7	2 467.8	5 508.3	137.4	147.6	(NA)	(NA)
1968 ASM	(NA)	(NA)	(NA)	215.5	1 456.8	122.3	250.8	740.2	2 878.8	2 357.4	5 234.6	133.9	142.6	(NA)	(NA)
1967 Census	3 445	4 042	1 608	221.7	1 414.0	125.3	252.3	710.8	2 753.0	2 349.5	5 102.6	127.9	139.1	97	99

[1]In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1967, see 1967 Census of Manufactures, vol. II, table 1 of the Industry chapter.

[2]For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

[3]Includes establishments with payroll at any time during year.

[4]Effective with the 1982 Economic Censuses, uniform instructions for reporting inventories were introduced for all sector reports. Up to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). In 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Because of this change in reporting instructions, the 1982 data for inventories and value added by manufacture included in the tables of this report are not comparable to the prior-year data shown above and in historical census of manufactures and annual survey of manufactures publications.

Key operating ratios for bread, cake industry

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
	INDUSTRY 2051, BREAD, CAKE, AND RELATED PRODUCTS								
1982 Census	19 037	52	1 970	8.68	40	65	46 052	41	44.89
1981 ASM	17 532	55	2 031	7.55	42	67	40 991	43	36.46
1980 ASM	16 073	56	2 007	6.88	43	68	36 979	43	32.89
1979 ASM	14 806	55	1 997	6.48	42	67	33 755	44	30.59
1978 ASM	14 354	54	1 974	6.61	42	68	31 733	45	30.01
1977 Census	13 122	55	1 968	6.01	42	67	30 170	43	28.01
1976 ASM	(D)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
1975 ASM	(D)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
1974 ASM	(D)	(S)	(S)	(S)	(S)	(S)	(S)	(S)	(S)
1973 ASM	9 402	57	1 991	4.20	46	73	18 807	50	16.48

Industry — Wholesale Bakeries and Grocery Chain Bakeries.

Wholesale Bakeries accounted for 90% of the industry's value of shipments in 1982 and 91% of value added by manufacture. Both percentages are unchanged from the 1977 Census.

At the same time, Grocery Chain Bakeries increased their share of both value of shipments and value added by manufacture at the expense of Retail Multi-Outlet Bakeries, and posted growth rates in both performance measures above those of wholesale baking.

Grocery Chain Bakeries in 1982 accounted for 9% of the industry's value of shipments and 8% of value added by manufacture, up from 8% and 7%, respectively, in 1977. Retail Multi-Outlet Bakeries accounted for only 1% of value of shipments and value added in 1982, down from 2% in 1977.

While the 1982 value-added total for Grocery Chain Bakeries of $634.2 million remained small in comparison to the $7,149.8 million figure for Wholesale Bakeries, the grocery chain baking operations posted a 60% gain in value-added from 1977. That is well above the 46% gain for wholesale baking and the industry overall, probably indicating a shift in grocery bakeries' product mix to higher value-added products.

Similarly, Grocery Chain Bakeries recorded a 55% gain in value of shipments in 1982, compared with 42% for Wholesale Bakeries and the industry overall.

The data for the different sectors of the industry also affirm the dominance of Wholesale Bakeries. This segment of the Bread, Cake and Related Products Industry accounted for 90% of the value of shipments, 91% of total employes, and 94% of the total payroll for the industry. Grocery Chain Bakeries, with 9% of the value of shipments, had 7% of the employes and 8% of the payroll total. Wholesale Bakeries accounted for 88% of the number of production workers, whereas Grocery Chain Bakeries employed 10% of the total.

The four-point spread between the gain in value added for the Bread, Cake and Related Products Industry and the value of shipments continues what is regarded as a positive trend.

Value added by manufacture in 1982 represented 60% of the industry's value of shipments, up from 58% in 1977, 57% in 1972, 54% in 1967 and 53% in 1963.

Primary gain trails total

Value of 1982 shipments of products classified as primary to the baking business was 38% above 1977, compared with the 42% rise in value of shipments of all products. That is in contrast to 1977, when the value of primary product shipments was 54% above 1972, and the value of all product shipments was up 51%.

Industry shipments, which totaled $13,143.3 million in 1982, compared with $9,274.8 million in 1977, represent the aggregate value of shipments of all establishments classified in the industry. The 1982 aggregate included

Data on value of shipments and value added by manufacture, by industry group, are shown in the following table for the past five Census of Manufactures years, with figures in millions of dollars and percentages of the total for the Bread, Cake and Related Products Industry in parentheses:

Value of shipments --(millions of dollars)--

	1982	1977	1972	1967	1963
Bread, Cake and Related (total)	**$13,143.3 (100)**	**$9,274.9 (100)**	**$6,152.6 (100)**	**$5,102.6 (100)**	**$4,506.0 (100)**
Wholesale bakeries	11,836.6 (90)	8,348.1 (90)	5,320.6 (86)	4,400.7 (86)	3,508.2 (78)
Grocery chain bakeries	1,172.4 (9)	755.9 (8)	651.5 (11)	468.3 (9)	465.5 (10)
Home service bakeries	n.a.	n.a.	4.6 (...)	98.2 (2)	333.5 (7)
Retail multi-outlet bakeries	134.3 (1)	170.9 (2)	175.9 (3)	135.4 (3)	198.8 (5)

Value added by manufacture --(millions of dollars)--

	1982	1977	1972	1967	1963
Bread, Cake and Related (total)	**$7,861.1 (100)**	**$5,370.4 (100)**	**$3,518.1 (100)**	**$2,753.0 (100)**	**$2,403.8 (100)**
Wholesale bakeries	$7,149.8 (91)	$4,892.4 (91)	3,073.1 (87)	2,390.4 (87)	1,868.2 (78)
Grocery chain bakeries	634.2 (8)	370.9 (7)	337.1 (10)	229.4 (8)	225.9 (10)
Home service bakeries	n.a.	n.a.	2.9 (...)	58.0 (2)	201.5 (8)
Retail multi-outlet bakeries	77.1 (1)	107.0 (2)	116.9 (3)	75.2 (3)	108.1 (4)

Baking data from four Census years

	Establishments		All employes		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories
	Total	With 20 employes or more	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)
BREAD, CAKE AND RELATED PRODUCTS												
1982 Census	**2,305**	**1,074**	**170.7**	**3,249.6**	**88.9**	**175.1**	**1,520.1**	**7,861.1**	**5,282.7**	**13,143.3**	**382.4**	**305.7**
Wholesale	2,169	954	155.1	2,953.4	78.0	154.2	1,316.3	7,149.8	4,686.9	11,836.6	354.0	n.a.
Grocery Chain	94	87	12.7	259.1	9.3	18.0	182.3	634.2	538.4	1,172.4	25.8	n.a.
Retail Multi-Outlet	42	33	3.0	37.2	1.6	2.9	21.4	77.1	57.3	134.3	2.6	5.5
1977 Census	**3,062**	**1,117**	**178.0**	**2,335.8**	**97.4**	**191.7**	**1,152.8**	**5,370.4**	**3,909.0**	**9,274.9**	**280.4**	**235.1**
Wholesale	2,900	976	160.1	2,107.2	84.5	166.6	986.3	4,892.4	3,458.2	8,348.1	256.7	209.1
Grocery Chain	100	87	12.3	174.7	10.0	19.8	134.6	370.9	386.9	755.9	14.2	20.4
Retail Multi-Outlet	62	54	5.5	54.0	3.0	5.3	32.0	107.0	64.0	170.9	9.5	5.6
1972 Census	**3,323**	**1,379**	**193.5**	**1,692.2**	**109.6**	**219.3**	**876.2**	**3,518.1**	**2,615.0**	**6,132.0**	**170.6**	**137.9**
Wholesale	3,077	1,177	167.7	1,480.5	89.5	180.0	705.9	3,073.1	2,248.4	5,320.6	139.7	n.a.
Grocery Chain	139	118	18.6	167.0	15.8	30.9	140.3	337.1	314.0	651.5	27.2	n.a.
Home Service	9	4	.3	1.8	.2	.3	.8	2.9	1.8	4.6	n.a.	n.a.
Retail Multi-Outlet	98	80	7.8	51.3	4.6	8.9	33.0	116.9	59.4	175.9	4.2	n.a.
1967 Census	**4,042**	**1,608**	**221.7**	**1,414.0**	**125.3**	**252.3**	**710.8**	**2,753.0**	**2,349.5**	**5,102.6**	**127.9**	**139.1**
Wholesale	3,751	1,387	188.5	1,223.8	101.7	207.5	576.5	2,390.4	2,010.0	4,400.7	115.2	115.9
Grocery Chain	128	104	18.4	111.8	16.4	30.0	95.6	229.4	239.1	468.3	9.2	16.7
Home Service	35	24	5.7	36.7	2.0	3.9	10.9	58.0	40.2	98.2	1.0	2.4
Retail Multi-Outlet	128	93	9.1	41.7	5.2	10.9	27.8	75.2	60.2	135.4	2.5	4.1

$10,769.3 million in products classified in the industry (primary); $358.4 million of products classified in other industries (secondary), and $2,015.7 million in miscellaneous receipts.

Plants in the Cookie and Cracker Industry, S.I.C. 2052, in 1982 shipped products valued at $142.4 million that were classified as primary to the Bread, Cake and Related Products Industry, according to the Census. That is up from $76.1 million in 1977. The only product shipped in 1982 by the Cookie and Cracker Industry for which a dollar value is given is bread-type rolls, at $27.2 million.

Plants in other industries shipped bread and cake products in 1982 valued at $116.5 million, with $86 million of that total in the bread-type rolls category.

In 1977, other industries' shipments of bread and cake products were valued at $102.1 million.

Cookies from bread bakers

Of the $358.4 million in secondary products shipped by establishments in the Bread, Cake and Related Products Industry in 1982, nearly a third, 32%, or $113.8 million, was in cookie or cracker products. In 1977, the industry's shipments of cookie and cracker products were valued at only $51.5 million.

Of the 1982 cookie and cracker product total, $111.9 million was in cookies, wafers and ice cream cones, compared with $46.6 million in 1977, and $1.9 million was in crackers, pretzels, biscuits and related products, down from $4.8 million in 1977.

The remaining $244.6 million in secondary products shipments by the Bread, Cake and Related Products Industry in 1982 included $132.8 million in frozen specialties products, $33.7

million in ice cream and frozen desserts, $31.9 million of flavoring extracts and syrups, and $22.1 million of food preparations, not elsewhere classified. With the exception of cookies of crackers, the 1977 Census did not provide value of shipment data on secondary products shipped by the industry. The 1982 miscellaneous receipts total of $2,015.7 million, a gain of 45% from $1,392.7 million in 1977, includes "receipts for work done for others on their materials; miscellaneous receipts, including receipts for repair work, sales of scrap and refuse, etc.," and "sales of products bought and resold without further manufacture, processing or assembly." Of the aggregate miscellaneous receipts, $1,834.7 million was in the resales category.

Reflecting the larger gains in value of shipments of secondary products, the industry's specialization ratio in 1982 declined to 97% from 99% in 1977 and 98% in 1972. Establishments in the Bread, Cake and Related Products Industry in 1982 accounted for 98% of the shipments of products considered primary to the industry.

That coverage ratio was the same as in 1977 and compared with 99% in 1972 and 1967.

Larger plants increase market share to 86%

LONG-STANDING TRENDS IN NUMBER of plants in the Bread, Cake and Related Products Industry and in shares of business among plants of different size categories accelerated in the 1977-82 period, according to the 1982 Census of Manufactures. There was a significant jump in the number of plants "disappearing" from the baking industry in the period, with almost all of that decrease occurring in the smallest plant size category, those with fewer than 20 employes. And the share of value of shipments and value added by manufacture accounted for by the larger plants, those with 100 or more employes, continued to increase.

Represent 22% of total plants

The 501 plants in the Bread, Cake and Related Products Industry with more than 100 employes — 22% of the industry's plants — accounted for 86% of the industry's value of shipments, or $11.3 billion out of the aggregate of $13.1 bilion. That 86% share is up from 83% in 1977, 81% in 1972, 79% in 1967 and 74% in 1963.

The gain in market share for the plants with 100 or more employes was at the expense of plants with fewer than 20 employes and those with 50 to 99 employes. The 1,231 baking plants with 20 to 49 employes accounted for 8% of total industry value of shipments in 1982, down slightly from 9% in 1977, 10% in 1972 and 11% in 1967.

Baking plants with 20 to 49 employes — a total of 366 in 1982 — accounted for 4% of the industry's value of shipments, unchanged from 1977 and compared with 5% in 1972.

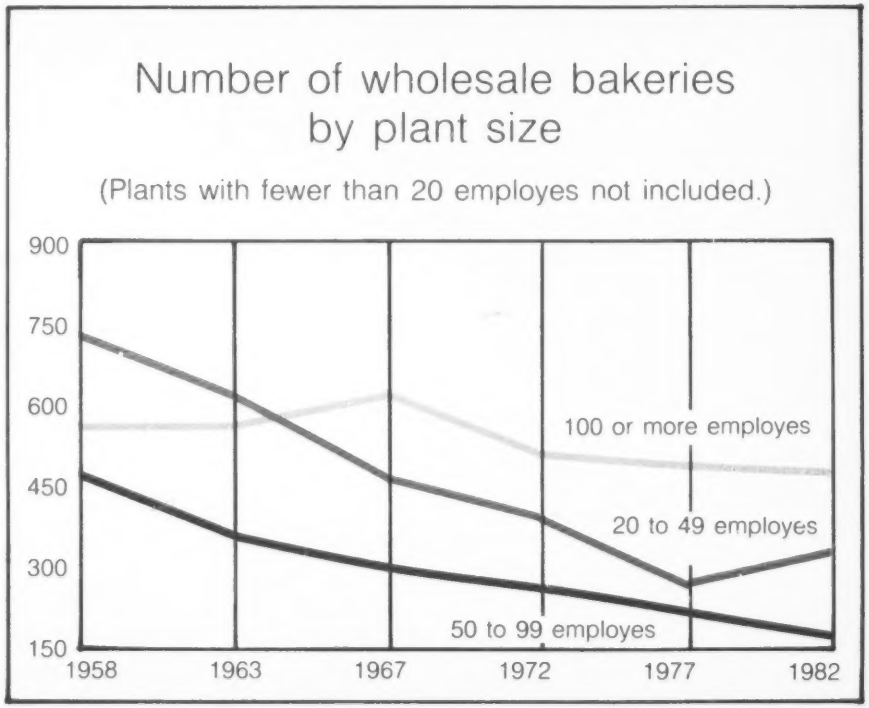
Similar for Wholesale Bakeries

The trend of increasing market share for larger plants also continued within the Wholesale Bakeries category of the Bread, Cake and Related Products Industry. The 440 wholesale plants with 100 or more employes — representing 20% of all wholesale plants — accounted for 86% of value of shipments by all wholesale bakeries in 1982. That is up from 84% in 1977, 81% in 1972 and 79% in 1967.

The 1,215 wholesale plants with fewer than 20 employes accounted for 3% of 1982 value of shipments by wholesale bakeries, down slightly from a 4% share in 1977.

Even larger in value added

The 501 plants in the Bread, Cake and Related Products Industry with more than 100 employes accounted for 86% of value added, 85% of cost of materials and ingredients, and 88% of capital expenditures in 1982.



The 1982 Census shows four plants Census, these four plants, all in the Wholesale Bakeries segment, had aggregate product shipments valued at $573 million, or an average of $143.2 million per plant. That $573 million

fewer than 20 employes, while representing 53% of plant numbers, accounted for only 2% of industry value of shipments. That share is down from 4% in 1977, 1972 and 1967. The 207 bak-

87% of the total value added by manufacture, 85% of the expenditures for materials and ingredients, and 86% of all capital expenditures. Similarly, in the Wholesale Bakeries category, the 440

in the 1,000 to 2,499-employe size category, the largest of nine plant size classifications. That total is down from six in 1977 and compares with two in 1972. According to the 1982

total is 86% larger than the total value of shipments in 1982 by the 1,231 baking plants with fewer than 20 employes. The aggregate also exceeds the total value of shipments of $568.2 mil-

Bread, Cake and Related Products baking plants by employe size

	1982	1977	1972	1967	1963	1958
1-19 employes	1,231	1,945	1,944	2,434	3,106	3,836
20-49 employes	366	314	459	555	764	897
50-99 employes	207	247	307	358	448	544
100 or more	501	556	613	695	692	708
Total plants	**2,305**	**3,062**	**3,323**	**4,042**	**5,010**	**5,985**

Wholesale baking plants by employe size

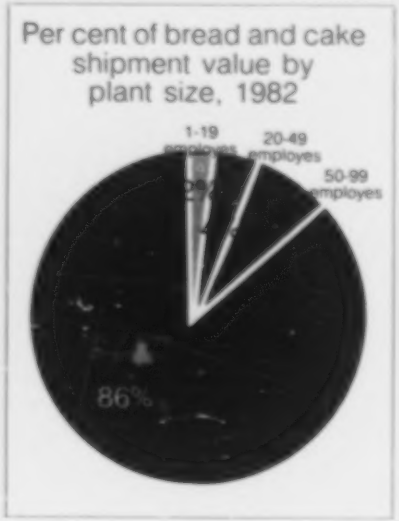
	1982	1977	1972	1967	1963	1958
1-19 employes	1,215	1,914	1,900	2,364	2,741	3,443
20-49 employes	333	276	388	473	624	742
50-99 employes	181	215	253	300	366	462
100 or more	440	495	536	614	556	552
Total plants	**2,169**	**2,900**	**3,077**	**3,751**	**4,287**	**5,199**

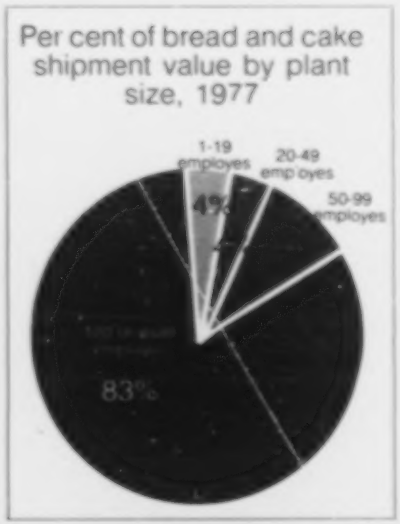
Share of bread, cake shipments by plant size

	All Establishments			Establishments with 1 to 19 employes			Establishments with 20 to 49 employes			Establishments with 50 to 99 employes			Establishments with 100 or more employes		
	Number	Shipments value (millions)	% of industry shipments value	Number	Shipments value (millions)	% of industry shipments value	Number	Shipments value (millions)	% of industry shipments value	Number	Shipments value (millions)	% of industry shipments value	Number	Shipments value (millions)	% of industry shipments value
Bread, cake and related products—															
1982	2,305	$13,143.3	100%	1,231	$ 307.7	2%	366	$ 568.2	4%	207	$ 967.5	8%	501	$11,300.0	86%
1977	3,062	9,274.9	100%	1,945	343.8	4%	314	385.6	4%	247	831.1	9%	556	7,714.4	83%
1972	3,323	6,152.6	100%	1,944	235.8	4%	459	327.1	5%	307	633.6	10%	613	4,956.1	81%
1967	4,042	5,102.6	100%	2,434	205.9	4%	555	292.6	6%	358	551.5	11%	695	4,052.6	79%
1963	5,010	4,505.9	100%	3,106	236.6	5%	764	330.2	8%	448	595.1	13%	692	3,344.0	74%
Wholesale bakeries—															
1982	2,169	$11,836.6	100%	1,215	$ 299.2	3%	333	$ 515.9	4%	181	$ 852.9	7%	440	$10,168.5	86%
1977	2,900	8,348.1	100%	1,914	336.1	4%	276	338.7	4%	215	687.5	8%	495	6,985.8	84%
1972	3,077	5,320.6	100%	1,900	225.6	4%	388	282.8	5%	253	507.4	10%	536	4,304.8	81%
1967	3,751	4,400.7	100%	2,364	195.1	4%	473	251.8	6%	300	461.8	10%	614	3,492.0	79%
1963	4,287	3,508.2	100%	2,741	209.3	6%	624	281.7	8%	366	496.2	14%	556	2,521.0	72%
Grocery chain bakeries—															
1982	94	$1,172.4	100%	7	$ 3.4	...	15	$ 29.3	2%	22	$ 107.0	9%	50	$1,032.6	89%
1977	100	755.9	100%	13	4.4	1%	13	26.3	3%	26	114.2	15%	48	611.0	81%
1972	139	651.5	100%	21	n.a.	n.a.	23	n.a.	n.a.	35	n.a.	n.a.	60	n.a.	n.a.
1967	128	468.3	100%	24	3.6	1%	24	19.5	4%	24	52.9	11%	56	392.3	84%
1963	153	465.5	100%	31	4.5	1%	25	14.8	3%	29	54.5	12%	68	391.7	84%
Retail multi-outlet bakeries—															
1982	42	$ 134.3	100%	27	$ 5.1	4%	18	$ 23.1	17	4	$ 7.6	6%	11	$ 98.6	73
1977	62	170.9	100%	8	$ 3.3	2%	25	20.6	12%	16	29.4	17%	13	117.6	69%
1972	98	175.9	100%	18	4.2	2%	47	20.3	11%	17	19.0	11%	16	132.4	75%
1967	128	135.4	100%	35	5.5	4%	51	17.6	13%	26	24.1	18%	16	88.2	65%
1963	289	198.8	100%	150	13.3	7%	86	23.7	12%	33	25.9	13%	20	135.9	68%

lion by the 366 plants with 20 to 49 employes.

Long-term trends in decreasing number of companies and of plants accelerated in the Bread, Cake and Related Products Industry.





According to the Census, there were 1,869 companies in the industry in 1982, down 680, or 27%, from the 2,549 companies in 1977, which in turn was down only 9% from 2,801 in 1972. The Census defines company as "a business organization consisting of one establishment or more under common ownership or control."

Plant number decrease of 25%

The 27% decrease in number of companies in 1982 was accompanied by a 25% decrease in number of plants in the Bread, Cake and Related Products Industry. The Census counted a total of 2,305 plants in 1982, compared with 3,062 in 1977, which was down 8% from 1972.

Almost all of the 757-plant loss between 1977 and 1982 was in those baking plants with fewer than 20 employes. That was a marked change from the 1972-77 period, when the plant decrease was concentrated among the larger baking plants.

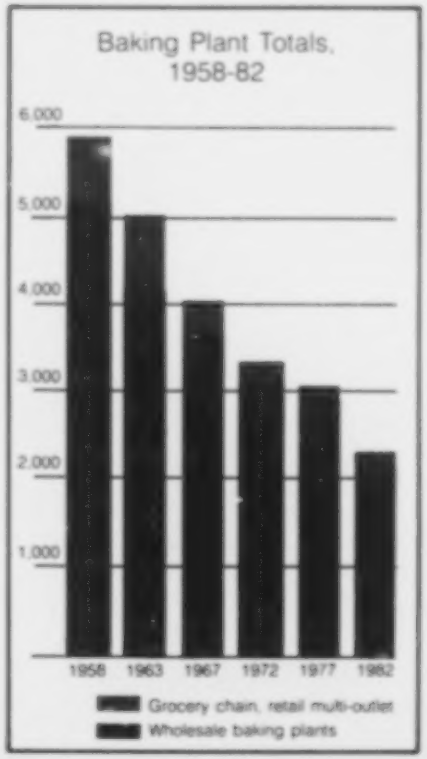
Of the 2,305 baking plants counted in the 1982 Census, a total of 1,074 were in the 20-employe or more category, while 1,231 were in the smaller size grouping. In the 1977 Census, 1,117 plants were counted in the larger category and 1,945 in the smaller plant grouping. Thus, the 1982 Census shows a decrease of only 43 plants, or 4%, in the 20-employe or more category, and a decrease of 714, or 37%, in smaller plants.

The 1982 total plant number of 2,305 compares with 3,323 in the 1972 Census, 4,042 in 1967 and 5,010 in 1963.

The decrease of 757 plants noted in the 1982 Census compares with a drop of only 261 plants in the 1972-77 period and also exceeds the 719-plant decrease in the 1967-72 period. In contrast to the 1977-82 Census period when number of plants with fewer than 20 employes decreased by 714, the 1977 Census showed one more plant in that size category than in 1972.

Gain in one plant size category

Despite the continuing decrease in total plant numbers in the Bread, Cake and Related Products Industry, the number of plants with 20 to 49 employes increased. Plants in this size category totaled 366 in 1982, up 17% from 314 in 1977. This category accounted for the bulk of the plant number decrease in the 1972-77 period, with the 1977 total of 314 down 46% from 459 in 1972.



Shipments of $100,000 or more

The 1982 Census is the second to list number of companies shipping $100,000 or more of principal baked food products. The listing, which includes duplication in numbers because many companies ship in excess of $100,000 of more than one product, shows that 168 companies in 1982 shipped white pan bread valued at $100,000 or more. That is down from 223 in 1977. Decreases were also noted in number of plants shipping white hearth bread and hamburger and wiener rolls.

Increases generally paralleled trends in poundage production, including more plants in the $100,000 or more category in whole wheat bread and other bread-type rolls, English muffins and hearth rolls.

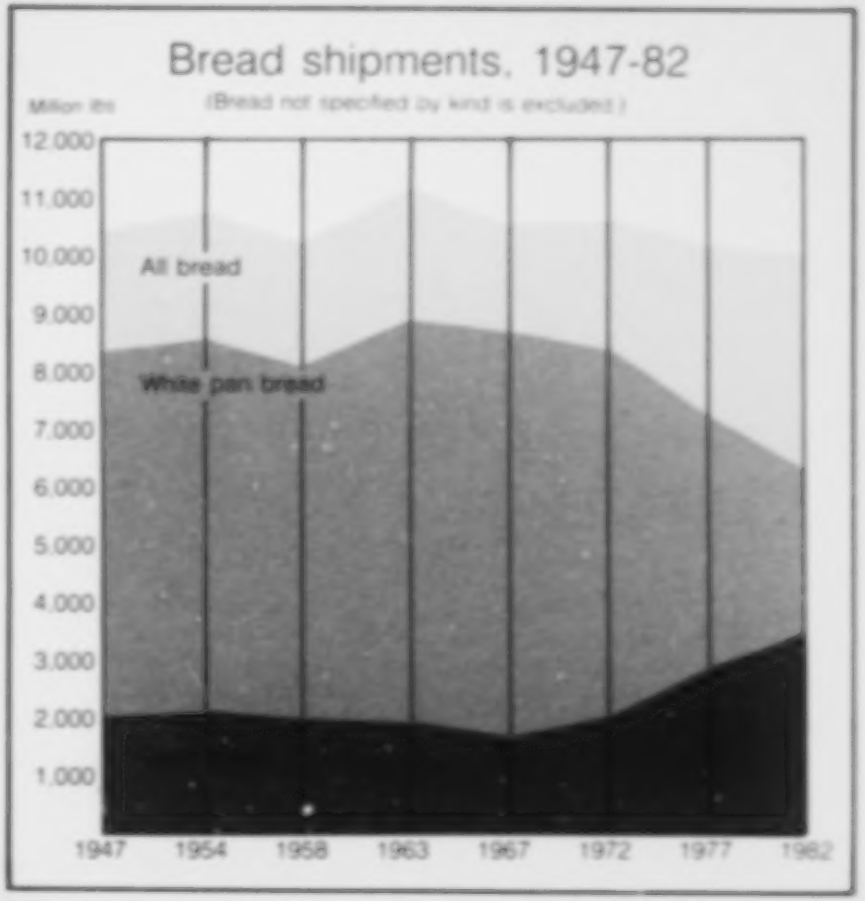
The following table shows number of companies shipping $100,000 or more of principal baked food products in 1982 and in 1977:

	Number of companies shipping $100,000	
	1982	1977
White pan bread	168	223
White hearth bread	149	193
Whole wheat, cracked	130	123
Rye, pumpernickel	110	117
Other variety bread	91	90
Hamburger, wiener rolls	152	185
Brown 'n serve rolls	60	79
English muffins	41	39
Hearth rolls	77	71
Other bread-type rolls	115	112
Bread stuffing, croutons	43	41
Yeast-raised donuts	94	131
Other sweet yeast goods	121	141
Snack cakes	49	39
Fruit cakes, holiday-type	26	35
All other soft cakes	114	135
Snack pies	41	44
Other fruit, custard pies	58	50
Pastries	36	36
Cake-type donuts	78	83

Bread-type rolls pace 3% gain in production

PRODUCTION OF PRODUCTS PRIMARY to the Bread, Cake and Related Products Industry in 1982 was almost 3% above the 1977 aggregate, according to the final Census of Manufactures report. Although the Census does not provide a shipment total for the Bread, Cake and Related Products Industry, the sum of the six major product categories shows 1982 production by all plants — those classified in the industry as well as those classified in other industries — totaled 17,405,000,000 lbs. That is up 465 million lbs, or 2.7%, from the aggregate of 16,940,000,000 lbs shipped in 1977.

While the 1982 and 1977 totals are not fully comparable to earlier years because of changes in product classifications and in the manner in which the Census lists product totals, on the basis of 1982 product classifications, comparable 1972 production aggregated 17,097,400,000 lbs, 2% below 1982.



Elimination and estimates

Difficulty in comparing poundage production in the 1982 Census with previous years stems from the elimination in the current Census of production figures for five "not specified by kind" categories and from the extensive use of estimates for some products.

For example, the 1982 Census does not provide a production total for "white, wheat and rye bread, not specified by kind." Nor does it show the production total for that category in 1977, which was listed in the 1977 Census at 611.2 million lbs. Similar eliminations were made in not-specified-by-kind bread-type rolls, (244.5 million lbs in 1977); sweet yeast goods, (128.3 million lbs in 1977); soft cakes (77.2 million lbs) and pies, (29 million lbs).

In addition, the 1982 final report notes that "for some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data." From 20% to 29% of published poundage figures for seven products, including white pan bread, were estimated in this manner. And from 10% to 19% of poundage for six other products, including hamburger and wiener rolls, was estimated on the same basis. (See chart on Pages 14-A and 15-A.)

The final 1982 Census revised production totals from the preliminary Census report for four products. Poundage was increased for bread stuffing, croutons and bread crumbs and for cake-type donuts; it was decreased for yeast-raised donuts and snack cakes. Net change was an increase of 29.2 million lbs.

According to the Census, production of all bread by all producers in 1982 aggregated 10,123.1 million lbs, down 1.4% from 10,271.7 million lbs in 1977. That decrease compares with a drop of 4% in 1977 bread production from the 1972 aggregate of 10,749.7 million lbs, again on the basis of 1982 product classifications. On the same basis, bread production totaled 10,649.5 million lbs in 1967 and 11,015.8 million lbs, the peak, in 1963.

Slowing in white bread decline

While production of white pan bread continued its 20-year downward trend, the percentage decrease in 1982 was smaller than in the previous Census period. Production of white pan bread in 1982, according to the Census, totaled 6,410.2 million lbs, off 12% from 7,321.6 million lbs in 1977, and compared with 8,657.3 million in 1972, 8,807.9 million in 1967 and the all-time peak of 9,002.2 million in 1963. White pan bread production in 1977 was 15% below the 1972 level.

Despite the continuing slide for white pan bread production, it remained wholesale baking's leading product in both value of shipments and in poundage. White pan bread in 1982 accounted for shipments valued at $2,617.3 million, 24% of the value of all bread and cake product shipments by all produc-

ers. In 1977, white bread represented 28% of value of shipments. In terms of poundage, white pan bread's share of the 1982 total was 37%, compared with 43% in 1977 and 51% in 1972.

Wheat bread leads category

Largest poundage increase in the bread category in 1982 was in "whole wheat, cracked wheat, multigrain and other dark bread." Shipments in this category totaled 1,956.1 million lbs, a gain of 686.1 million lbs, or 54%, from 1,270.2 million lbs in 1977 and up 151% from 777.7 million lbs in 1972. Wheat bread production has increased rapidly since hitting a low point of 566.6 million lbs in 1967.

A marked slowing was noted in the rate of gain in shipments of white hearth bread, including French and Italian, in 1982. Shipments totaled 918.8 million lbs, up 38.9 million lbs, or 4%, from 1977. That contrasts with a 330-million-lb increase in the 1977 Census following a 40.8-million-lb gain in 1967-72.

Shipments of rye bread, including pumpernickel, totaled 383 million lbs in 1982, a decrease of 4.3 million lbs, or 1%, from 387.3 million lbs in 1977. The latter total was down 9% from 426 million in 1972 and compared with the peak of 620.3 million lbs in 1954.

Shipments of "other variety bread," including raisin, potato, salt-rising, salt-free and canned, totaled 455 million lbs in 1982, up 10% from 412.7 million lbs in 1977 and compared with 339 million in 1972. The peak for this category was 630.3 million lbs in 1958.

Bread-type rolls up 15% from '77

While total bread shipments in 1982 were 148.6 million lbs below the 1977 aggregate, poundage of bread-type rolls was up 593.1 million lbs. Shipments of from 257.3 million lbs in 1977, the first Census in which the category was listed. This segment also led the group in percentage gain in value of shipments, with a jump of 89%.

Shipments of bread stuffing, croulion lbs, or more than double the 136.5-million-lb production of 1977. Shipments of English muffins in 1982 totaled 404 million lbs, up 21% from 334.8 million lbs in 1977. The 1977 Census also was the first to identify 1982 totaled 279 million lbs, a gain of 15.5 million, or 6%, from 263.5 million lbs in 1977.

Mixed results in sweet goods

Production of all sweet yeast goods

Summary statistics for S.I.C. 2051

Item	Bread, cake, and related products (SIC 2051)			
	Total	Wholesale bakeries, including home service (SIC 2051-12)	Grocery chain bakeries (SIC 2051-13)	Retail multioutlet bakeries (SIC 2051-16)
Companies ..... number...	1 869	(NA)	(NA)	(NA)
All establishments ..... do...	2 305	2 169	94	42
With 1 to 19 employees ..... do...	1 231	1 215	7	9
With 20 to 99 employees ..... do...	573	514	37	22
With 100 employees or more ..... do...	501	440	50	11
All employees:				
Average for year ..... 1,000...	170.7	155.1	12.7	3.0
Annual payroll ..... mil. dol...	3 249.6	2 953.4	258.1	37.2
Production workers:				
Average for year ..... 1,000...	88.9	78.0	9.3	1.6
March ..... do...	87.7	76.9	9.2	1.6
May ..... do...	88.8	77.8	9.4	1.6
August ..... do...	90.5	79.4	9.5	1.6
November ..... do...	88.7	77.7	9.3	1.6
Hours ..... millions...	175.1	154.2	18.0	2.9
January to March ..... do...	42.1	37.1	4.3	.7
April to June ..... do...	44.0	38.8	4.5	.7
July to September ..... do...	45.3	40.0	4.6	.7
October to December ..... do...	43.7	38.2	4.7	.8
Wages ..... mil. dol...	1 520.1	1 316.3	182.3	21.4
Value added by manufacture ..... do...	7 861.1	7 149.8	634.2	77.1
Cost of materials, etc. ..... do...	5 282.7	4 686.9	538.4	57.3
Materials, parts, containers, etc., consumed ..... do...	3 729.8	3 307.8	377.0	45.0
Resales ..... do...	1 286.1	1 142.8	134.3	9.0
Fuels consumed ..... do...	132.7	116.9	14.0	1.8
Purchased electric energy ..... do...	109.3	95.3	12.6	1.4
Contract work ..... do...	24.9	24.2	.6	.1
Value of shipments, including resales ..... do...	13 143.3	11 836.6	1 172.4	134.3
Value of resales ..... do...	1 834.7	1 652.4	171.7	10.5
Capital expenditures for plant and equipment ..... do...	420.8	390.8	26.9	2.9
New capital expenditures ..... do...	382.4	354.0	25.8	2.6
New buildings and other structures ..... do...	92.1	86.3	5.1	.6
New machinery and equipment ..... do...	290.4	267.7	20.7	2.0
Used capital expenditures ..... do...	38.4	36.9	1.1	.3
Primary product specialization ratio ..... percent...	97	(NA)	(NA)	(NA)
Coverage ratio ..... do...	98	(NA)	(NA)	(NA)

all rolls in 1982 amounted to 4,472.7 million lbs, up 15% from 3,879.6 million lbs in 1977.

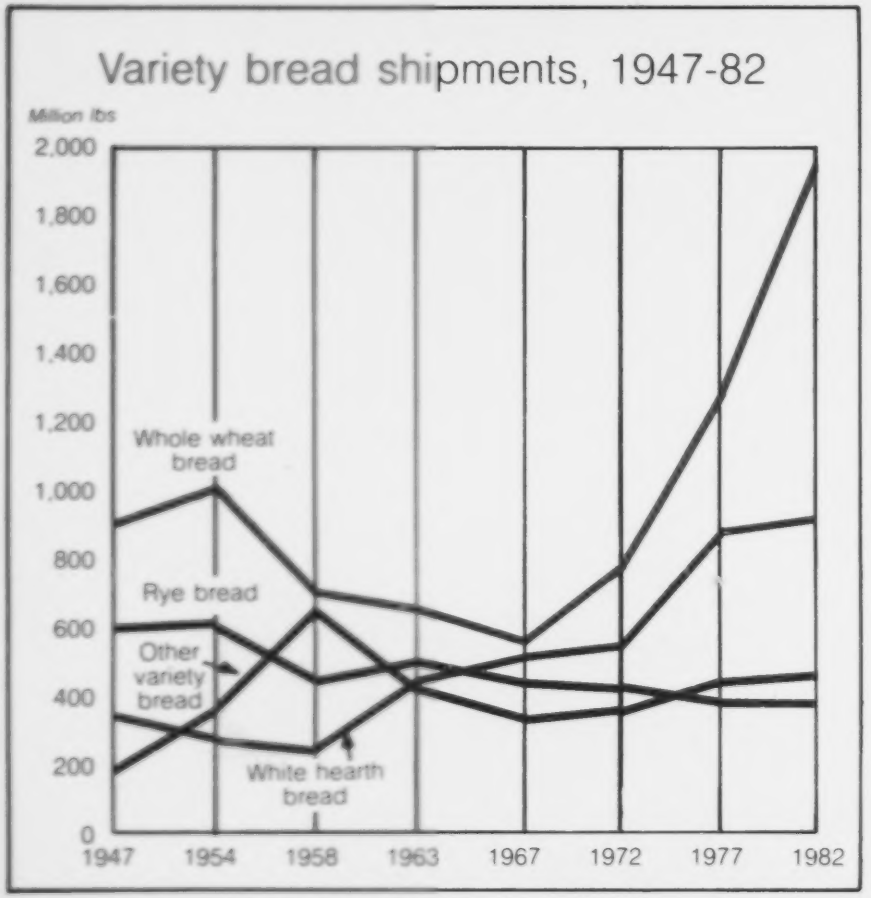
All six product categories in the bread-type rolls group posted poundage gains in the 1977-82 period, led by hearth rolls and the "other bread-type rolls" segment, including Kaiser rolls and bagels. Shipments in the latter product category in 1982 totaled 421.2 million lbs, up 163.9 million lbs, or 64%, tons and bread crumbs in 1982 totaled 376.6 million lbs, a gain of 147.1 million lbs, or 64%, from 1977 production of 229.5 million lbs. The preliminary Census report for 1982 had placed shipments of bread stuffing, croutons and bread crumbs at 340.3 million lbs.

Doubling in hearth rolls

Hearth roll shipments in 1982 aggregated 273.4 million lbs, up 136.9 million lbs, or 100%, from 1977 production of 136.5 million lbs. The Census had reported hearth roll and English muffin production separately.

Hamburger and wiener rolls continued as baking's largest product in poundage after white pan bread. Shipments of these rolls in 1982 totaled 2,718.5 million lbs, up 60.5 million lbs from 2,658 million lbs in 1977. That 2% increase in poundage contrasts with a 13% gain in the previous Census period.

Shipments of brown 'n serve rolls in 1982 totaled 695.2 million lbs, down 123.3 million lbs, or 15%, from 818.5 million in 1977, and continuing a downward trend extending back to 1972, when production totaled 831.1 million lbs. The Census shows mixed performance among sweet goods, with 1982 shipments of snack cakes, "other pies," and cake donuts above 1977 levels. On the other hand, production of other sweet yeast goods, fruit cakes, soft



(Bread not specified by kind is excluded.)

(Products not specified by kind are excluded.)

cakes and snack pies in 1982 was below 1977.

One of the more significant changes in the sweet goods category was in cake donuts, with 1982 shipments of 444.3 million lbs, up 90.2 million lbs, or 25%, from 354.1 million in 1977. That increase contrasts with a 9% decrease noted in cake donut production in 1977 from 1972 levels.

Revision in both donut totals

The final Census report increased production of cake donuts by 52.9 million lbs from the preliminary report's total of 391.4 million lbs. At the same time, it lowered production of yeast-raised donuts by 48.8 million lbs. Shipments of yeast-raised donuts in 1982, according to the final report, totaled 140.3 million lbs, down 82.2 million, or 37%, from 1977.

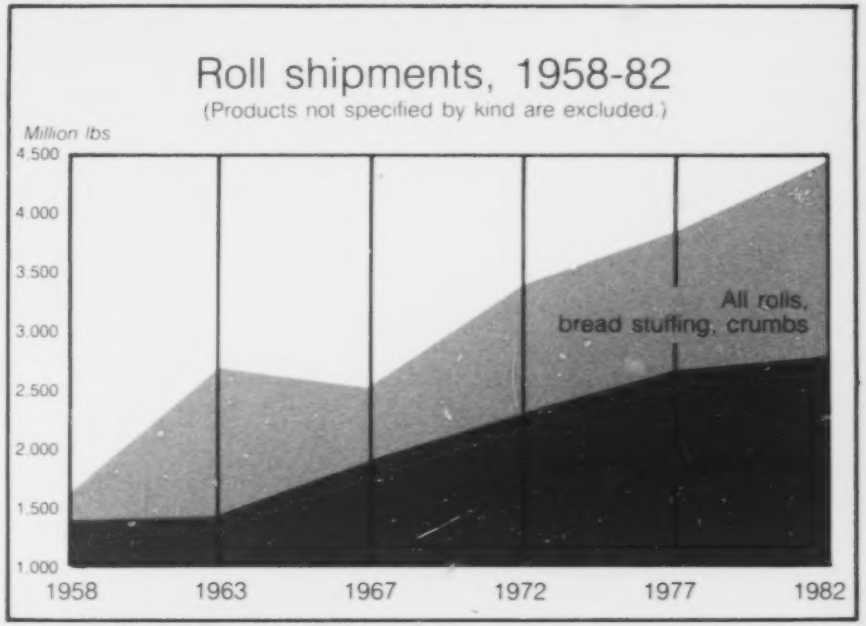
While the final Census report for the Frozen Specialties Industry has not been released, the preliminary report for that industry showed donut production trends exactly opposite of those in fresh donuts produced by the Bread, Cake and Related Products Industry. Production of frozen cake donuts totaled 78.4 million lbs in 1982, down from 108.6 million lbs in 1977. Production of frozen sweet yeast goods, including yeast-raised donuts, totaled 391.1 million lbs, a fourfold increase from 93 million lbs in 1977.

Snack cakes in 11% increase

Production of fresh soft cakes, according to the final Census report for the Bread, Cake and Related Products Industry, totaled 1,203.3 million lbs, up 5% from 1,147.1 million in 1977. Production of snack cakes totaled 891.2 million lbs, up 87.1 million lbs, or 11%, from 1977. The 1982 snack cake total was revised downward by 11.2 million lbs in the final report from the preliminary Census figure.

Fruit cake production in 1982 totaled 16.6 million lbs, down 8.1 million lbs, or 33%, from 1977, while production of all other soft cakes, including pound, layer, sheet and cheese, aggregated 295.5 million lbs, down 22.8 million lbs, or 7%, from 1977.

Production of fresh pies, fruit and custard, in 1982 totaled 466.4 million lbs, down slightly from 469 million lbs in 1977.



Bread, cake and roll shipments in pounds, dollar value

[Includes quantity and valun of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included.

1982 product code	Product	1982			1977		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
	BREAD, CAKE, AND RELATED PRODUCTS						
2051- —	Total	(NA)	(X)	11 038.1	(NA)	(X)	7 965.9
20511 —	Bread, white, wheat, and rye (including frozen)	(NA)	(X)	4 698.1	(NA)	(X)	3 500.7
20511 11	White pan — mil lb baked wt.	168	**6 410.2	2 617.3	223	7 321.6	2 197.2

	Variety breads:							
20511 13	White hearth, including French, Italian, etc.	do..	149	**918.8	434.5	193	879.9	308.5
20511 15	Whole wheat, cracked wheat, multigrain, and other dark wheat breads	do..	130	1 956.1	961.8	123	1 270.2	468.5
20511 17	Rye, including pumpernickel	do..	110	**383.0	206.5	117	387.3	157.7
20511 28	Other variety breads (raisin, potato, salt-rising, salt-free, canned, etc.)	do..	91	**455.0	254.1	90	412.7	172.1
20511 00	Bread, white, wheat, and rye, n.s.k.		(NA)	(X)	221.9	(NA)	(X)	196.7
20512 —	Rolls, bread-type, including brown and serve, stuffing, and crumbs		(NA)	(X)	2 437.7	(NA)	(X)	1 679.6
	Rolls, bread-type (including frozen):							
20512 33	Hamburger and wiener rolls	mil lb baked wt..	152	*2 718.5	1 326.4	185	2 658.0	966.8
20512 35	Brown and serve rolls	do..	60	*279.0	161.6	79	283.5	115.8
20512 36	English muffins	do..	41	*404.0	258.1	39	334.8	164.5
20512 37	Hearth rolls	do..	77	**273.4	143.6	71	136.5	79.9
20512 38	Other bread-type rolls (kaiser, except hearth-type, parkerhouse, etc.) including bagels	do..	115	**421.2	233.0	112	257.3	123.0
20512 41	Breadstuffing, croutons, and bread crumbs	do..	43	*376.6	237.5	41	229.5	128.3
20512 00	Rolls, bread stuffing, bread crumbs, including frozen, n.s.k.		(NA)	(X)	77.4	(NA)	(X)	99.5
20513 —	Sweet yeast goods, except frozen		(NA)	(X)	760.7	(NA)	(X)	640.4
20513 13	Yeast-raised doughnuts	mil lb baked wt..	94	*140.3	162.4	131	222.5	170.0
20513 98	All other types of sweet yeast goods, including sweet rolls and coffee cake	do..	121	*554.9	580.8	141	596.0	384.8
20513 00	Sweet yeast goods, n.s.k.		(NA)	(X)	17.5	(NA)	(X)	85.8
20514 —	Soft cakes, except frozen		(NA)	(X)	1 231.2	(NA)	(X)	949.9
20514 13	Snack cakes	mil lb baked wt..	49	891.2	852.4	39	804.1	599.9
20514 15	Fruit cakes, holiday type	do..	26	16.6	37.1	35	24.7	26.0
20514 19	All other soft cakes (except frozen), including pound, layer, sheet, cheese, etc.	do..	114	**295.5	322.8	135	318.3	257.5
20514 00	Soft cakes, except frozen, n.s.k.		(NA)	(X)	19.0	(NA)	(X)	64.5
20515 —	Pies (fruit and custard), except frozen		(NA)	(X)	394.5	(NA)	(X)	297.1
20515 13	Snack pies	mil lb baked wt..	41	279.8	249.7	44	286.9	157.0
20515 19	All other	do..	58	186.6	144.2	50	182.1	122.0
20515 00	Pies (fruit and custard), except frozen, n.s.k.		(NA)	(X)	.6	(NA)	(X)	18.1
20516 —	Pastries:							
20516 00	Pastries (except frozen), all types of baking powder leavened only, including cream puffs, eclairs, lady fingers, French pastry, puff pastry, etc.		36	(X)	39.2	36	(X)	31.2
20517 —	Doughnuts (cake type):							
20517 00	Doughnuts, cake type (except frozen) (baking powder leavened)	mil lb baked wt..	78	444.3	485.2	83	354.1	241.1
20510 00	Bread, cake, and related products, n.s.k., typically for establishments with 20 employees or more (see note)		(NA)	(X)	726.0	(NA)	(X)	372.3
20510 02	Bread, cake, and related products, n.s.k., typically for establishments with less than 20 employees (see note)		(NA)	(X)	275.5	(NA)	(X)	253.6

Note: In 1982 Census of Manufactures, data for establishments of small single-unit companies with up to 20 employees were estimated from administrative-record data rather than data actually collected from respondents. Employment cutoff used for administrative records for each industry and shipments figures are included in code ending with "002". In both 1982 and 1977 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000"

[1]Data reported by all producers, not just those with shipments of $100,000 or more.

[2]For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

Sweet goods lead gains in average price per lb

WIDE VARIATIONS MARKED AVERAGE price-per-pound calculations for the principal products of the Bread, Cake and Related Products Industry in 1982 in comparison with 1977 averages. While the Census does not provide data for all producers, those establishments classified in the Bread, Cake and Related Products Industry accounted for 88% of the total poundage figures for all producers, according to the 1982 Census of Manufactures.

The following table shows average price compilations for principal product categories and individual products in 1982, 1977 and 1972, with per cent of change from the previous Census.

Average price per pound of product

	1982	1977	1972	1967	% gain 1982 over 1977	% gain 1977 over 1972	% gain 1972 over 1967
All bread	**$0.4422**	**$0.3217**	**$0.2150**	**$0.1846**	**37%**	**50%**	**16%**
White pan bread	0.4083	0.3001	0.2002	0.1734	36%	50%	15%
White hearth bread	0.4729	0.3506	0.2958	0.2158	35%	19%	37%
Wheat bread	0.4917	0.3688	0.2489	0.2158	33%	48%	15%
Rye bread	0.5444	0.4072	0.2768	0.2210	34%	47%	25%
Other variety	0.5585	0.4170	0.2941	0.2525	34%	42%	17%
All rolls, stuffing	**0.5450**	**0.4073**	**0.2651**	**0.2396**	**34%**	**54%**	**11%**
Hamburger, wiener	0.4879	0.3645	0.2441	0.2256	34%	49%	8%
Brown 'n serve	0.5792	0.4387	0.2919	0.2781	32%	50%	5%
English muffins	0.6389	0.4913	n.a.	n.a.	30%	...	...
Hearth rolls	0.5252	0.5853	n.a.	n.a.	-10%	...	...
Other rolls	0.5532	0.4780	n.a.	n.a.	15%	...	...
Stuffing, crumbs	0.6306	0.5590	0.3024	0.2086	13%	85%	45%
Sweet yeast goods	**1.0942**	**0.6778**	**0.4719**	**0.3834**	**61%**	**44%**	**23%**
Yeast-raised donuts	1.1575	0.7640	0.3938	0.3682	52%	94%	7%
Sweet rolls, coffee cake	1.0467	0.6456	0.5112	0.3939	62%	26%	30%
Soft cakes	**1.0232**	**0.7759**	**0.4926**	**0.3894**	**32%**	**58%**	**27%**
Snack cakes	0.9565	0.7461	n.a.	n.a.	28%	...	...
Fruit cakes	2.2349	1.3363	n.a.	n.a.	97%	...	...
Pies	**0.8458**	**0.5966**	**0.3903**	**0.3365**	**42%**	**53%**	**16%**
Snack pies	0.8924	0.5472	n.a.	n.a.	63%	...	...
All other pies	0.7728	0.6700	n.a.	n.a.	15%	...	...
Donuts, cake-type	**1.0470**	**0.6809**	**0.4610**	**0.3747**	**54%**	**48%**	**23%**

Average price of all bread in 1982 was 44.22c per lb, up 37% from 1977. Leading the upturns was white pan bread, with an average price of 40.83c per lb, up 36% from 1977. That was below the 50% rise noted in 1977 but well above the 15% gain in 1972.

There were some surprising results in compilation of average prices in the coffee cake was up 62%. Average price of cake-type donuts in 1982 was $1.0470 per lb, up 54% from 1977.

bread-type rolls categry, which includes brown 'n serve rolls, stuffing and bread crumbs. While average price of the category was up 34% in 1982, there were wide variations. Average price of hamburger and wiener buns in 1982 was up 34% from 1977, but average price for hearth rolls was down 10%. And average price of stuffing and bread crumbs was up only 13% from 1977, in sharp contrast to the previous Census period, when average pices rose 85%.

Distribution accounts for 22% of employes

OF THE 170,700 PERSONS EMPLOYED in the Bread, Cake and Related Products Industry in 1982, a total of 88,900 worked in production, 37,100 in distribution of products, and 44,700 were in other positions, according to the 1982 Census of Manufactures.

The following table shows employment numbers, in thousands, and payroll, in millions of dollars, with per cent of totals, for the Bread, Cake and Related Products Industry in 1982.

	Number of Employes (thousands)	Per cent of total	Payroll (millions)	Per cent of total
Production	88.9	52	$1,520.1	47
Transportation	37.1	22	954.8	29
Other	44.7	26	774.7	24
Totals	**170.7**	**100**	**$3,249.6**	**100**

The 37,100 employes in transportation of products in 1982 was equal to 22% of all employes in the Bread, Cake and Related Products Industry, the same ly, that number was up from 40,600 in 1977.

The Bureau of the Census noted that its measurement of transportation empioyes included those "engaged in delivery of products sold by that establishment and utilized as a separate work force."

Employes engaged in transportation of products, according to the Census, represented a payroll of $954.8 million,

on product prices either at the wholesale or retail level, an estimate of the wholesale price can be obtained by dividing the total value of shipments of a product by total production of that product in pounds.

On this basis, average prices for sweet goods in 1982 led percentage upturns from 1977 averages, followed by dustry as well as in other industries.

As a product grouping, sweet yeast goods in 1982 averaged $1.0942 per lb of baked weight, up 61% from 67.78c in 1977. That rise is well above a 44% gain in 1972 over 1967. Within the sweet yeast goods group, average price of yeast-raised donuts was up 52% while the average price of sweet rolls and percentage as in 1977, when there were 40,000 employes in transportation and industry employment totaled 178,000. The 1977 Census was the first to measure employment of distribution personnel in baking.

The 44,700 employes in other positions in 1982 included administrative, sales and clerical personnel. Interesting- up 49% from $642.5 million in 1977. Transportation employes in 1982 represented 29% of total industry payroll, up from 28% in 1977. Production employes accounted for 47% of total industry payroll, down from 49% in 1977, while other employes accounted for 24% of the total payroll, up from 23% in 1977.

Shifts in state product shipment rank continue

CONSIDERABLE REALIGNMENTS IN state leadership in value of baked foods product shipments are reflected in the 1982 Census of Manufactures for the Bread, Cake and Related Products Industry. The Census shows that California, Texas, New York, Pennsylvania, Illinois and Ohio continued to be the leaders in value of shipments by all producers, those classified in the Bread, Cake and Related Products Industry as well as in other industries. But wide variations occurred in changes, primarily increases, from 1977 aggregates.

In white, wheat and rye bread, California retained its No. 1 ranking with value of shipments of $526.7 million in 1982, up 41% from $374.7 million in 1977. While California's gain of 41% exceeded the national average of 34%, its share of the total value of shipments for white, wheat and rye bread remained constant at 11%.

Texas jumps into second place

Texas, which ranked fifth among the leading states in white, wheat and rye bread shipments in 1977, jumped to second place in 1982 on the strength of a 49% rise in value of shipments, the sharpest percentage increase among the major producing states.

Plants in Texas in 1982 shipped white, wheat and rye bread valued at $304.2 million, compared with $204.7 million in 1977.

New York, which ranked second in value of its bread shipments in 1977, slipped to third behind Texas.

Plants in New York in 1982 shipped white, wheat and rye bread valued at $286.6 million, up 25% from $230.1 million in 1977.

Neighboring Pennsylvania fell from third place in 1977 to fourth in 1982. Its value of bread shipments in 1982 was $282.6 million, up 25% from $225.6 million in 1977. Thus, the gain in value of shipments in both New York and Pennsylvania was below the national average of 34%.

Illinois, which ranked fourth in 1977 value of bread shipments, fell to fifth in 1982 with that state's value of shipments rising only 12%. Plants in Illinois in 1982 shipped bread valued at $231.2 million, compared with $206.7 million in 1977.

Sharper gains in several states

Several states, particularly in the South and Southeast, posted gains in value of white, wheat and rye bread shipments that were well above the national average. Included were Massachusetts, up 66% to $122.4 million; North Carolina, up 44% to $140.3 million; Georgia, up 52% to $113.5 million; Florida, up 55% to $187.8 million; Alabama, up 88% to $101.7 million, and Virginia, up 71% to $99.3 million. In the West, the sharpest gains were recorded by Colorado, 70%; Arizona, 79%, and Washington, 74%.

Of the 37 states for which value of white, wheat and rye bread shipments is provided in the 1982 Census, only two — Michigan and Maryland — posted declines. Value of shipments in Michigan in 1982 was $131.6 million, down from $136.2 million in 1977. In Maryland, value of bread shipments totaled $87.4 million in 1982, off from $91.2 million in 1977.

Shuffling in bread-type rolls

Some shuffling of state rankings also was noted in bread-type rolls, baking's second-largest product category in terms of poundage and dollar value. California retained its first-place ranking with a gain of 60% in value of bread-type roll shipments, well above the national average gain of 45%, which in turn was the greatest for any major product grouping in baking.

Value of bread-type roll shipments from California plants in 1982 totaled $306.8 million, up from $191.7 million in 1977. Significance of that gain is also reflected in the finding that value of bread-type roll shipments by the nation's leading bread and roll producer in 1982 was 58% of the value of its bread shipments, compared with 51% in 1977.

Ohio, second-ranking bread-type roll shipper in 1977, slipped to fifth in 1982 with plants in that state posting only a 9% gain in value of shipments, from $115.5 million in 1977 to $126 million in 1982. Replacing Ohio in second place was Pennsylvania. Plants in that state recorded bread-type roll shipments in 1982 valued at $155.2 million, up 45% from $106.9 million in 1977, when the state ranked third.

Illinois, which ranked fifth in value of bread-type roll shipments in 1977, moved up to third in 1982, on the strength of a 58% gain in value of shipments. Bread-type roll shipments from Illinois plants in 1982 were valued at $151.8 million, compared with $95.7 million in 1977.

New Jersey remained in fourth place in bread-type roll shipments. Value of shipments amounted to $139.9 million in 1982, up 34% from $104.1 million five years earlier. At the same time, this gain was 11 percentage points below the national average.

New York ranked sixth in 1982 value

of shipments of bread-type rolls and paced all states in percentage gain from 1977 totals. Value of shipments by New York plants in 1982 totaled $125.1 million, up 106% from $60.7 million in 1977.

Only two fail to show gains

Of the 35 states for which value of shipment figures are provided in bread-type rolls, only Wisconsin and West Virginia failed to show increases over 1977. Value of bread-type roll shipments from Wisconsin plants in 1982 totaled $39 million, down from $41.2 million in 1977. Value of shipments from West Virginia aggregated $17 million in 1982, down from $18.6 million in 1977.

The Bureau of the Census practice of withholding state data to avoid disclosing information on individual companies makes state-by-state comparisons difficult for other product categories. In the sweet yeast goods category, for example, data are provided for both 1982 and 1977 for only 16 states.

California leads sweet goods

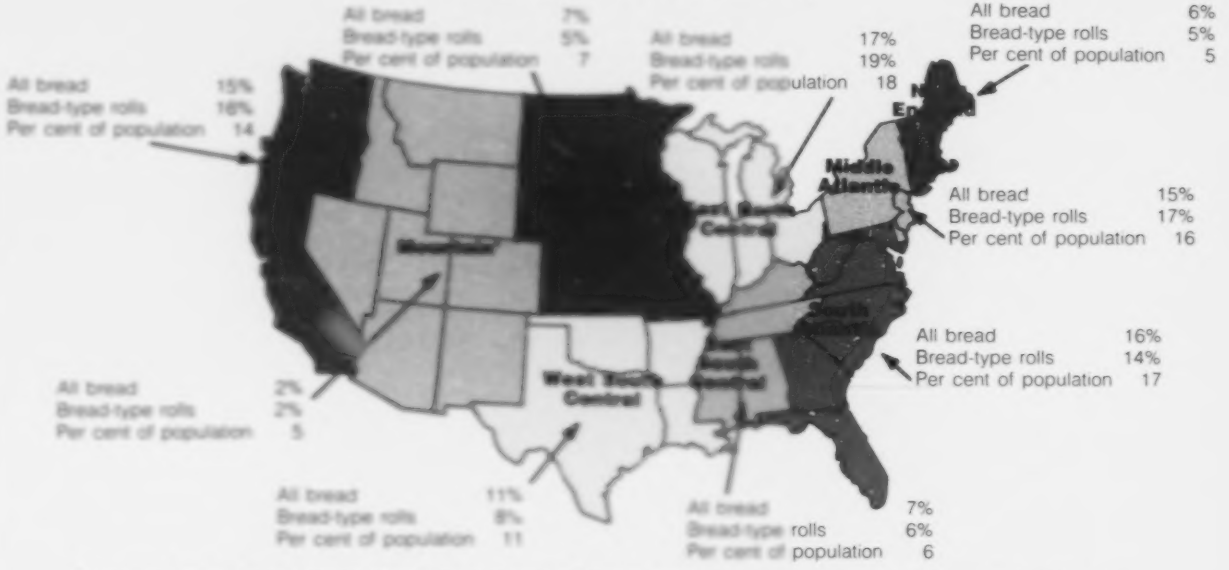
According to the limited data, California led in value of shipments of sweet yeast goods. Value of these shipments in 1982 was $91.1 million, up 40% from $65.3 million in 1977, when the state ranked second.

Data are not provided for 1982 sweet yeast goods shipments in New York, which ranked first in the 1977 Census with shipments valued at $85.9 million. Following California in value of sweet yeast goods shipments in 1982 were Illinois, $54 million, up 17%; Texas, $46.6 million, down 7%; Tennessee, $33.9 million, up 12%; and Ohio, $28.7 million, down 5%.

For all states, value of shipments of sweet yeast goods in 1982 was up 19%.

Bread, roll shipments by areas

(per cent of total U.S. value, and population comparison.)



** Percentage figures do not include undisclosed data for six states in Mountain area: Montana, Idaho, Wyoming, New Mexico, Utah and Nevada.*

(Population percentages based on Bureau of the Census estimates of resident population, including Armed Forces residing in each state, as of July 1, 1983.)

New York tops soft cakes

In soft cakes, New York led with 1982 value of shipments of $148.1 million, up 43% from $103.6 million in 1977. California was second with shipments valued at $109.7 million, up 17% from 1977. Tennessee was in third place with soft cake shipments in 1982 valued at $107.1 million, up 75% from $61.1 million in 1977. New Jersey was fourth with shipments in 1982 valued at $100.2 million, up 53% from $65.5 million in 1977. Illinois ranked fifth with shipments valued at $69.2 million, up 22% from $56.5 million in 1977. Texas was close behind Illinois with shipments valued at $68.2 million, up 66% from $41.1 million in 1977. For all states, value of soft cake shipments in 1982 was up 30% from 1977.

Fresh pie lead by Pennsylvania

Pennsylvania continued to lead in shipments of non-frozen pies, fruit and custard, valued at $52 million in 1982, up only 10% from $47.1 million in 1977. California was second with 1982 shipments valued at $40.9 million, up 54% from $26.3 million. For all states, the value of shipments of unfrozen pies in 1982 was up 33% over 1977. In contrast, the value of shipments of frozen pies in 1982, according to the Census of Manufactures for the Frozen Specialties Industry, was down 5% from 1977.

California again led in cake-type donuts, with 1982 shipments valued at $65.8 million, up 52%. That percentage rise compares to a 93% gain as the national average.

Regional forces reaffirmed

Affirmation of the regionality of

Value of shipments by selected states

	White, wheat and rye bread		Rolls bread type		Sweet yeast goods		Soft cakes		Pies, fruit and custard		Cake type donuts	
	1982	1977	1982	1977	1982	1977	1982	1977	1982	1977	1982	1977
	(Millions of dollars)											
U.S. Total	$4,698.1	$3,500.7	$2,437.7	$1,679.6	$760.7	$640.4	$1,231.2	$969.9	$394.5	$297.1	$465.2	$241.1
Northeast Region												
New England Div.												
Massachusetts	122.4	73.8	47.5	28.5	—	5.5	39.5	23.0	—	—	18.2	EE
Connecticut	145.7	107.8	83.8	60.4	—	4.5	12.0	10.5	—	—	—	—
Middle Atlantic Div.												
New York	286.6	230.1	125.1	60.7	—	85.9	148.1	103.6	—	17.8	—	9.2
New Jersey	141.6	93.9	139.9	104.1	—	—	100.2	65.5	—	—	—	10.9
Pennsylvania	282.6	225.6	155.2	106.9	20.3	25.8	—	97.3	52.0	47.1	—	3.4
Midwest Region												
East North Central Div.												
Ohio	229.9	189.0	126.0	115.5	28.7	30.1	42.7	75.8	36.8	21.8	23.1	22.9
Indiana	100.0	81.3	97.2	57.9	26.2	18.1	12.7	6.6	—	—	19.7	6.6
Illinois	231.2	206.7	151.8	95.7	54.0	47.5	69.2	56.5	13.3	12.6	27.2	5.5
Michigan	131.6	136.2	50.9	50.1	8.8	22.9	26.7	37.2	—	10.8	12.6	6.8
Wisconsin	83.5	70.4	39.0	41.2	15.0	10.6	8.0	4.3	4.1	AA	10.0	5.5
West North Central Div.												
Minnesota	66.4	48.4	23.3	19.6	12.0	6.0	16.0	CC	—	4.8	—	—
Iowa	66.4	49.1	18.7	17.6	3.0	3.2	—	—	—	—	—	4.8
Missouri	134.5	102.1	51.1	39.7	12.6	13.4	—	—	7.9	CC	11.2	6.8
Nebraska	33.1	23.2	28.0	18.1	4.1	BB	—	—	—	—	—	—
Kansas	37.9	23.0	10.5	10.2	—	—	—	—	—	—	—	—
South Region												
South Atlantic Div.												
Maryland	87.4	91.2	66.7	24.2	16.6	11.4	13.7	13.8	10.3	10.2	—	5.2
Virginia	99.3	58.1	40.6	29.7	21.1	14.9	—	6.4	—	—	3.4	3.8
West Virginia	52.1	47.3	17.0	18.6	—	—	—	—	—	—	—	—
N. Carolina	140.3	97.4	78.0	58.0	20.4	19.0	30.2	26.0	6.5	13.9	—	—
S. Carolina	61.8	38.2	33.6	21.3	—	—	—	—	—	—	—	—
Georgia	113.5	74.8	38.7	27.0	—	37.3	59.2	48.1	—	—	—	13.1
Florida	187.8	120.6	72.2	51.4	24.9	16.7	24.9	EE	—	—	—	—
East South Central Div.												
Kentucky	53.1	40.3	—	14.1	—	—	—	—	—	—	—	—
Tennessee	119.6	106.1	54.8	39.4	33.9	30.2	107.1	61.1	7.6	4.7	—	—
Alabama	101.7	54.2	68.6	41.0	—	14.2	—	—	—	—	—	—
Mississippi	33.1	24.6	16.6	CC	—	—	—	—	—	—	—	—
West South Central Div.												
Arkansas	36.9	27.5	37.3	25.2	—	—	—	—	—	—	—	—
Louisiana	100.4	72.8	29.8	27.8	6.7	2.9	—	—	—	—	—	—
Oklahoma	54.5	40.0	22.2	15.4	—	—	—	—	—	—	—	—
Texas	304.2	204.7	112.0	86.5	46.6	50.5	68.2	41.1	26.1	10.3	27.1	10.1
West Region												
Mountain Division												
Colorado	65.5	38.6	24.7	13.2	—	9.6	—	10.1	—	4.1	—	7.5
Arizona	43.9	24.5	23.8	9.4	—	—	—	—	—	—	—	—
Utah	35.7	21.9	—	6.8	—	—	—	—	—	—	—	2.4
Pacific Division												
Washington	93.6	53.8	27.6	25.1	—	17.1	—	6.4	—	—	—	7.0
Oregon	64.3	55.0	34.4	20.7	—	4.4	—	—	—	—	—	—
California	526.7	374.7	306.8	191.7	91.1	65.3	109.7	93.7	40.9	26.5	65.8	43.4
Hawaii	36.8	EE	10.9	5.0	—	—	—	—	—	—	—	—

(For 1977, value ranges substitute for actual figures withheld to avoid disclosing data for individual companies: AA-less than $2 million; BB-$2 million to $4.9 million; CC-$5 million to $9.9 million; EE-$10 million to $19.9 million.

wholesale baking's production and distribution operations is provided by grouping the 1982 state value of shipment totals into geographic divisions and comparing those area figures against 1983 population statistics of the Bureau of the Census.

While these aggregates are not strictly comparable in all cases because shipment data are withheld for some states, this shortcoming is minimized in the case of white, wheat and rye bread, where the value of shipment data detailed for 37 states account for 96% of the U.S. total. In bread-type rolls, the data for 35 states account for 93% of the U.S. total.

Close alignment in most areas

In most geographic areas, the percentages of total value of shipments for bread and for rolls are within one or two percentage points of the share of U.S. resident population for that part of the country. (See map above). For instance, the New England division, which includes the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut — accounted for 5% of the U.S. resident population on July 1, 1983, and for 6% of the value of bread shipments and 5% of the roll shipments. Similarly, the Pacific coast division, which includes the states of Washington, Oregon, California, Alaska and Hawaii, accounted for 14% of U.S. resident population, 15% of total value of bread shipments and 16% of total value of roll shipments.

The widest variation appears to be in the Mountain division — with 5% of the population but only 2% of both bread and roll shipments. At the same time, that discrepancy may be explained by the absence of value of shipment data for five of the eight states in that area.

Capital spending up 36%; larger share for plants

EXPENDITURES ON NEW PLANT AND equipment by the 2,305 establishments classified in the Bread, Cake and Related Products Industry in 1982 totaled $382.4 million, up 36% from $280.4 million in 1977. Standing out in the capital expenditures for 1982 is a 76% jump in spending on new structures in baking. The overall rise of 36% in capital expenditures from 1977 compares with a 64% gain in 1977 spending from 1972 levels. (Dollar figures are at prices current for the year specified and are not adjusted for inflation.)

The 1982 capital spending of $382.4 million for new plant and equipment was more than double the 1972 aggregate of $170.6 million and compares with $127.9 million in 1967, $95.3 million in 1963 and $104.1 million in 1958.

Five-year combined aggregate

Combining the 1982 capital expenditures for new plant and equipment of $382.4 million and Annual Survey of Manufactures estimates for capital spending in the Bread, Cake and Related Products Industry provides an aggregate of $1,553.5 million in the five-year period ended in 1982. A comparable aggregate for the five-year period ended in 1977 is not available as the Annual Survey of Manufactures in that period did not estimate capital spending.

According to the Annual Survey of Manufactures, new capital expenditures by the Bread, Cake and Related Products Industry totaled $324.3 million in 1978, $290.4 million in 1979, $288.6 million in 1980 and $267.8 million in 1981.

In addition to the expenditures for dustry in 1982, 91% was for new plant and equipment, while 9% was for used plant and equipment. That ratio is basically unchanged from 92% for new plant and equipment and 8% for used in 1977, and compares with 96% and 4%, respectively, in 1972.

New structures cost $92 million

The spending for new plant and equipment in 1982 included $92.1 million for new structures, up 76% from $52.2 million in 1977, and $290.4 million for new machinery and equipment, up 27% from $228.2 million in 1977. That spending for new structures rose at a sharper rate than spending for new machinery and equipment reflects the relatively large number of new plants built in the later period.

The $92.1 million aggregate for new plant construction was 24% of the total "new" expenditures in 1982, up from 19% in 1977 and compared with 21% in 1972.

Wholesale bakeries accounted for capital expenditures of $390.8 million in 1982, or 93% of the Bread, Cake and Related Products Industry aggregate. That share is up two percentage points from 1977 and contrasts with with a share of only 82% in 1972.

The 1982 spending by wholesale bakeries compares with $277.3 million in 1977, or a gain of 41%, which is slightly above the 39% rise in spending by the entire Bread, Cake and Related Products Industry.

Capital expenditures by Grocery Chain Bakeries climbed in the 1977-82 period after declining in the previous five-year period. Companies in this segthe 1972 aggregate of $27.6 million. Grocery Chain Bakeries accounted for 6% of total spending in the Bread, Cake and Related Products Industry, unchanged from 1977 but well below the 16% share in 1972. Retail Multi-Outlet Bakeries spent $2.9 million for new and used plant and equipment in 1982, down sharply from $9.7 million in 1977 and compared with $4.3 million in 1972.

Larger-plant spending share up

Concentration of capital expenditures among the largest-sized plants increased in the 1977-82 period after lessening in the previous five-year Census period. The 501 plants in the Bread, Cake and Related Products Industry with more than 100 employes accounted for new capital expenditures in 1982 of $329.2 million, or 86% of the industry's total. In the 1977 Census, the 556 plants in this size category accounted for outlays of $211.3 million, or 75% of total industry new expenditures. In 1972, the 613 plants in the 100-or-more employe category spent $136.1 million, or 80% of the aggregate.

The share of new capital expenditures by plants in the three other principal size categories declined. Plants with 50 to 99 employes accounted for 8% of total industry spending, down from 13% in 1977. Plants with 20 to 49 employes accounted for 4% of new capital spending in 1982, down from 6% in 1977, while plants with fewer than 20 employes accounted for 2% of new capital expenditures, down from 6% in 1977.

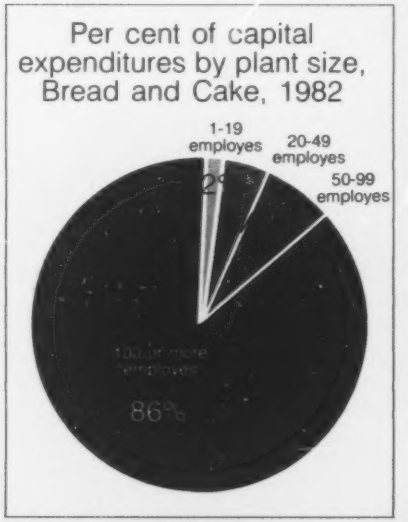
Wholesale Bakeries share larger

Within Wholesale Bakeries group, of the number of wholesale establishments, aggregated $311.3 million, or 88%, of Wholesale Bakeries' new capital spending.

The 1,215 plants with fewer than 20 employes spent $5.8 million in 1982, only 2% of the category's total in that year. Plants with 20 to 49 employes accounted for capital spending of $13.3 million, or 4% of the total, while plants with 50 to 99 employes had capital expenditures of $23.6 million, or 7% of the Wholesale Bakeries total.

Bread plants spend 65% of outlay

In detailing capital expenditures by plants according to their degree of specialization in products primary to the industry, the Census shows that the 495 plants with bread as a primary product accounted for capital outlays of $248.4



new plant and equipment, the Bread, Cake and Related Products Industry spent $38.4 million for used plant and equipment in 1982. That compares with $23.4 million in 1977, a gain of 64%. Spending on used equipment in 1972 totaled $6.9 million.

Total expenditures by the Bread, Cake and Related Products Industry for both new and used plant and equipment in 1982 was $420.8 million, up 39% from $303.8 million in 1977 and compared with $177.5 million in 1972.

New plant, equipment at 91%

Of total capital expenditures by the Bread, Cake and Related Products Industry spent $26.9 million for new and used plant and equipment in 1982, up 60% from $16.8 million in 1977. The latter total was off 48% from

Capital expenditures for 1982 and 1977

	Bread, Cake and Related Products		Wholesale bakeries		Grocery chain		Retail multi-outlet	
	1982	1977	1982	1977	1982	1977	1982	1977
	--(millions of dollars)--							
New plant, equipment	$382.4	$280.4	$354.0	$256.7	$25.8	$14.2	$2.6	$9.5
New structures	92.1	52.2	86.3	48.6	5.1	2.8	0.6	0.8
New machinery, equip	290.4	228.2	267.7	208.1	20.7	11.4	2.0	8.7
Used plant, equipment	38.4	23.4	36.9	20.7	1.1	2.6	0.3	0.2
Total spending	**$420.8**	**$303.8**	**$390.8**	**$277.3**	**$26.9**	**$16.8**	**$2.9**	**$9.7**

plants with 100 or more employes accounted for an even larger share of new capital expenditures. Spending by those 440 plants, representing only 20% million, or 65% of the industry total.

The following shows new capital expenditures in 1982, in millions of dollars, for plants by primary products, with per cent of new expenditures in the Bread, Cake and Related Products Industry:

Primary product	Number of plants	Capital expenditures	Per cent of total
Bread	495	$248.4	65.0%
Rolls	152	54.3	14.0%
Sweet goods	99	20.4	5.0%
Soft cakes	64	30.8	8.0%
Pies	33	3.4	1.0%
Pastries	8	1.0	0.2%
Cake donuts	10	0.6	0.1%

New detail on ingredient usage; flour down 4%

EXPANDED DATA ON THE USE OF ingredients and other materials in wholesale baking are provided in the 1982 Census of Manufactures for the Bread, Cake and Related Products Industry. Baking ingredient usages detailed for the first time are cookie and cracker-type flour, wheat gluten, cake-type prepared mixes, corn syrup and high fructose corn syrup, dry whey and dairy blend milk replacers, compressed yeast and emulsifiers. The 1982 study also provides separate figures for the first time on cost of flexible packaging materials.

Usage valued at $3.7 billion

According to the Census, the Bread, Cake and Related Products Industry in producing its products in 1982 used ingredients, materials, containers and other supplies with a value of $3,729.8 million, up 32% from $2,829.1 million in 1977. Price increases, as well as changing product mix, accounted for most of the gain as aggregate poundage production by plants in the industry was up less than 3% in the period.

Delivered cost of ingredients and other materials used in the industry in 1977 was 45% above the 1972 total, which in turn was only 6% above the 1967 figure.

The importance of allowing for inflation in reviewing the Census data is particularly apparent in the statistics on materials, ingredients, containers and supplies used. A calculation of unit costs, for example, shows that white bread-type flour in 1982 averaged $11.31 per cwt, compared with $7.55 per cwt in 1977.

Flour cost third of aggregate

According to delivered cost figures, total flour cost in the Bread, Cake and Related Products Industry in 1982 was $1,177.4 million. This was 32% of the cost of all materials and ingredients used by the Bread, Cake and Related Products Industry. In 1977, total delivered flour cost was $822.9 million, or 29% of the aggregate. In 1972, the flour cost amounted to $630.1 million, which was 32% of the total.

Packaging materials at 13%

Ranking second to flour as baking's largest purchasing cost in 1982 was the packaging and container category. Total cost of flexible packaging materials and paperboard containers, boxes and corrugated paperboard in 1982 was $478 million, or 13% of the total cost of all materials and ingredients. This category in 1977 represented a cost of $369.6 million, also 13% of the aggregate.

Total cost of sweeteners used by the Bread, Cake and Related Products Industry in 1982 was $331.6 million, or 9% of the total cost of all ingredients and materials. That compares with $232.1 million, or 8% of the aggregate, in 1977. Cost of fats and oils in 1982 totaled $231.5 million, or 6% of the aggregate, compared with $218 million in 1977, which was 8% of that year's total cost of ingredients and materials.

Prepared flour mixes, with a total cost of $122.9 million, represented 3% of total costs, compared with $101.5 million, or 4%, in 1977.

In 1972, the Bread, Cake and Related Products Industry spent $68.7 million on mixes, which represented 4% of total material and ingredient costs.

Less flour, mixes; more product

While the final Census report includes some relatively minor changes in ingredient usage and cost numbers from the preliminary report issued in the fall of 1984, no change was recorded in flour or bakery mixes. Thus, the final report reaffirms the preliminary report's indication that the Bread, Cake and Related Products Industry in 1982 used 4% less wheat flour and 9% less prepared flour mixes than in 1977. Those decreases contrast with the Census finding that poundage production of bread, cake and roll products in 1982 was 2.7% larger than in 1977.

Among explanations offered for the variation in flour usage and actual pro-

duction is that the ingredient use figure is for only those establishments classified in the Bread, Cake and Related Products Industry, while the production totals include shipments of bread and cake products by plants classified in other industries as well. At the same time, it was noted that the Bread, Cake and Related Products Industry accounted for 98% of the value of shipments of products considered primary to that industry.

Effect of changing product mix

Changing product mix — particularly increasing production of wheat bread, multi-grain loaves, buns and rolls and decreasing white bread production — also affects flour usage, with many of the bread and roll products that are on the upswing using more non-flour ingredients and/or higher water levels in formulas than white bread.

First estimate for wheat gluten

Increasing wheat gluten use in baked foods production also affects flour consumption. The 1982 Census is the first to provide separate usage data on wheat gluten, placing consumption by the industry at 110.5 million lbs. Some wheat gluten suppliers have suggested that the Census figure is too high and that baking's annual use of wheat gluten is in the range of 85 million to 90 million lbs.

In addition, it should be noted that the 1982 Census figure on use of white bread-type flour, which represents 87% of all flour used in the Bread, Cake and Related Products Industry, is partially based on estimates by the Bureau of the Census. The 1982 re- Census report stated that "for some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data."

Up to 19% of the total quantity figure for white bread-type flour was estimated in this manner, the Census Bureau said.

According to the Census, the Bread, Cake and Related Products Industry in 1982 used 10,006.2 million lbs, or 100,062,000 cwts, of flour, down 4% from 104,711,000 cwts in 1977 and also slightly less than 100,862,000 cwts in 1972. Flour usage by the industry in 1967 totaled 102,130,000 cwts. If the 1982 figure is accurate, flour usage in the Bread, Cake and Related Products Industry in that year was the smallest since 1963, when usage totaled 95,790,000 cwts.

Cake-type flour use drops 29%

The 1982 flour usage includes 86,927,000 cwts of white bread-type flour, down 7% from 93,439,000 cwts in 1977, and 3,485,000 cwts of cake-type flour, down a striking 29% from 4,878,000 cwts in 1977. The 1977 Census was the first to provide separate figures for white bread-type flour and cake-type flour. Broken out for the first time in the 1982 Census is use of cookie and cracker-type flour, placed at 501,000 cwts.

Usage of "other wheat flour, including whole wheat, cracked wheat, and clear flour but excluding prepared mixes," aggregated 8,044,000 cwts in 1982, according to the Census.

Mix usage at 3.9 million cwts

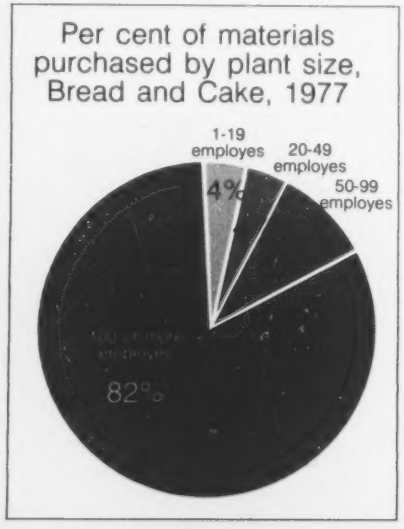
Use of prepared mixes by the industry in 1982 totaled 3,934,000 cwts, off 9% from 4,301,000 cwts in 1977 and compared with 5,192,000 cwts in 1972. Mix usage in 1967 and 1963 totaled 6,426,000 cwts and 4,378,000 cwts, respectively.

Mix usage in 1982 included 2,401,000 cwts of cake and yeast-type donut mixes, down 9% from 2,633,000 cwts in 1977, and 635,000 cwts of bread-type mixes, including franchise mixes, up 6% from 598,000 cwts in 1977.

The Census for the first time provides a separate figure for cake-type mixes, placing 1982 usage in the Bread, Cake and Related Products Industry at 110,000 cwts. Use of "other prepared mixes, including sweet goods," totaled 788,000 cwts.

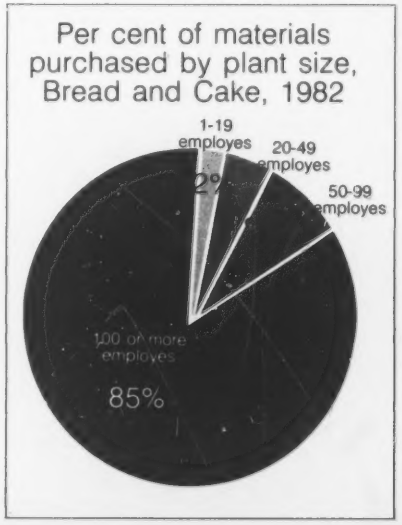
Added use of sweeeteners

Use of sweeteners by the Bread, Cake and Related Products Industry continued to increase, according to the Census. It shows usage in 1982 of 1,856 million lbs, up 9% from 1,679.9 million lbs in 1977 and compared with 1,505.8 million lbs in 1972. Sweetener usage has increased steadily since 1963, when



The following table shows usage of major ingredients — wheat flour, prepared mixes, shortening and sweeteners — by the Bread, Cake and Related Products Industry for 1982 and previous Census years:

	Wheat flour	Prepared mixes	Shortening	Sweeteners
		—(million lbs)—		
1982	10,006.2	393.4	473.3	1,856.0
1977	10,471.1	430.1	467.2	1,679.9
1972	10,086.2	519.2	482.3	1,505.8
1967	10,213.0	642.6	397.4	1,386.1
1963	9,579.0	437.8	306.9	1,296.2
1958	9,165.5	n.a.	302.5	1,335.7
1954	8,656.1	n.a.	253.5	1,146.9



Ingredients, materials consumed

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry.

1982 material code	Material		1982 Quantity[1]	1982 Delivered cost (million dollars)	1977 Quantity[1]	1977 Delivered cost (million dollars)
	Materials, ingredients, containers, and supplies		(X)	3 729.8	(X)	2 828.1
	Wheat flour, except prepared flour mixes:					
204117	White bread-type flour	mil lb	*8 692.7	984.0	9 343.9	705.9
204116	Cake-type flour	do	348.5	38.7	487.8	36.1
204111	Cookie and cracker-type flour	do	50.1	4.6		
204112	Wheat gluten	do	110.5	40.0	639.4	78.9
204114	Other wheat flour, including whole wheat, cracked wheat, and clear flour but excluding prepared mixes	do	*804.4	110.1		
	Prepared mixes:					
204151	Doughnut, cake and yeast types	do	240.1	75.7	263.3	63.8
204152	Bread-type, including franchise mixes	do	63.5	18.7	59.8	18.5
204153	Cake-type	do	11.0	4.9	*107.0	19.2
204154	Other prepared mixes, including sweet goods	do	78.8	23.6		
	Sweeteners:					
206011	Sugar (cane and beet) in terms of sugar solids	1,000 s tons	395.8	174.8	473.5	146.1
204606	Glucose syrup (corn syrup) (conventional or regular) in terms of solids	mil lb	313.8	47.1		
204604	High fructose corn syrup in terms of solids	do	618.2	70.7	732.9	86.0
200611	Other natural and artificial sweeteners, including dextrose, honey, molasses, blends of corn sweeteners and sugar, etc., in terms of solids	do	132.4	39.0		
	Fats and oils, including frying oils:					
207011	100-percent vegetable shortening	do	106.1	32.2	332.9	104.8
207012	Shortening, animal and blends of animal and vegetable	do	*367.2	113.0	134.3	39.0
201151	Lard	do	77.1	20.4	123.5	31.3
207014	Other fats and oils (cooking oils, butter, margarine and puff paste, etc.)	do	155.6	65.9	121.3	42.9
	Milk and milk replacers:					
202311	Dry milks	do	(S)	34.1	162.7	38.9
202312	Dry whey (sweet and acid)	do	8.7	1.9	(X)	(*)
202303	Blends, soy/whey and others	do	**87.2	19.2	(X)	(*)
	Yeast:					
209941	Compressed	do	211.9	78.9	312.7	72.1
209943	Active dry	do	(S)	33.7		
201722	Liquid, dried, and frozen eggs (in terms of dry weight equivalent)	do	*79.3	50.6	94.1	49.0
209994	Emulsifers	do	(S)	7.8	(X)	(*)
206601	Chocolate (compounds, cocoa, chocolate liquor, etc.)	do	*99.3	51.9	(X)	54.1
190003	Flexible packaging materials[4]		(X)	302.4	(X)	(*)
265001	Paperboard containers, boxes, and corrugated paperboard[4]		(X)	175.6	(X)	(*)
970099	All other materials, ingredients, containers, packaging materials, and supplies[4]		(X)	541.5	(X)	[3]798.4
971000	Materials, ingredients, containers, and supplies, n.s.k.[2]		(X)	568.8	(X)	444.1

1-For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10% of published figure: * 10 to 19% estimated; ** 20 to 29% estimated. If 30% or more is estimated, figure is replaced by (S).

2-Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

3-For 1977, materials codes 202312, 202303, 209994, 190003 and 265001 were combined with material code 970099.

4-For 1977, material code 970005, containers and wrapping materials, which has a delivered cost of $369.9 million, was combined with material code 970099 because it may not be directly comparable to the 1982 material codes 190003 and 265001.

the industry consumed 1,296.2 million lbs.

The 1982 sweetener total includes 395,800 tons, or 791.6 million lbs, of cane and beet sugar, down 16% from 473,500 tons, or 947 million lbs, in 1977. The industry's usage of cane and beet sugar in 1982 was only 53% of the 1972 total, which was 1,505.8 million lbs. The preliminary Census report had placed cane and beet sugar usage in 1982 at 367,100 tons.

The switch by many bakers from cane and beet sugar to corn-based sweeteners is reflected in the 1982 Census report showing a 45% increase in use of other sweeteners from 1977 levels. Use of corn syrup, high fructose corn syrup and other natural and artificial sweeteners, including blends of corn sweeteners and sugar, aggregated 1,064.4 million lbs in 1982, compared with 732.9 million lbs in 1977.

The 1982 Census is the first to provide separate usage figures for corn syrup (313.8 million lbs) and for high fructose corn syrup (618.2 million lbs). The remaining 132.4 million lbs of the 1,064.4-million-lb total for other sweeteners was in "other natural and artificial sweeteners, including dextrose, honey, molasses, blends of corn sweeteners and sugar."

Contraction in 100% vegetable

Changing ingredient use is also reflected in the 1982 Census figures for fats and oils, including frying oils. According to the Census, the Bread, Cake and Related Products Industry in 1982 used 106.1 million lbs of 100% vegetable shortening, down 68% from 332.9 million lbs in 1977, which was the first year that shortening consumption was detailed by types. In contrast to the

sharp decrease in use of 100% vegetable shortening, the industry in 1982 used 367.2 million lbs of animal shortening and blends of animal and vegetable shortening, a 173% increase from 134.3 million lbs in 1977. The 1982 figure for animal shortening and blends of animal and vegetable shortening is partially based on estimates of up to 19% of the published total.

Use of lard by the industry totaled 77.1 million lbs in 1982, down 38% from 123.5 million lbs in 1977 and 71% below 266.1 million lbs in 1972.

New data on milk replacers

In the milk and milk replacers category, the industry in 1982 used 8.7 million lbs of dry whey, sweet and acid, and 87.2 million lbs of soy/whey and other blends. Both of these ingredients are shown for the first time in the 1982 Census. The Census withheld usage data on dry milk, noting that more than 30% of the total was based on estimates. Usage of dry milk by the industry in 1977 and 1972 totaled 162.7 million lbs and 184.9 million lbs, respectively.

The 1982 report also withheld publication of usage figures on active dry yeast and emulsifiers for the same reason. Both ingredients, along with compressed yeast, are listed separately in the 1982 Census for the first time. Usage of compressed yeast in 1982 was placed at 211.9 million lbs. In 1977, the industry used 312.7 million lbs of yeast, both compressed and active dry types.

Flexible packaging cost listed

In separating flexible packaging materials from the previous "containers and wrapping materials" category, the 1982 Census for wholesale baking placed cost of flexible packaging used by the industry at $302.4 million. Cost of paperboard containers, boxes and corrugated paperboard was set at $175.6 million. The aggregate, $478 million, is up 29% from $369.6 million in 1977.

Wholesale share hits 89%

Total cost of materials and ingredients used by Wholesale Bakeries in 1982 was $2,505.5 million, or 89% of the total for the Bread, Cake and Related Products Industry. Total cost of materials and ingredients used by Grocery Chain Bakeries was $273.7 million, or 10% of the industry total. Both percentages are unchanged from 1977.

Baking plants with 100 or more employes accounted for 85% of all materials and ingredients purchased in 1982, up from 82% in 1977. Shares for all other plant groupings by employe size decreased. Plants with 50 to 99 employes accounted for 8% of total purchases in 1982, down from 10% in 1977. Those plants with 20 to 49 employes accounted for 5% of all purchases, down from 4% in 1977, and plants with fewer than 20 employes represented 2% of total industry purchases, compared with 4% in 1977.

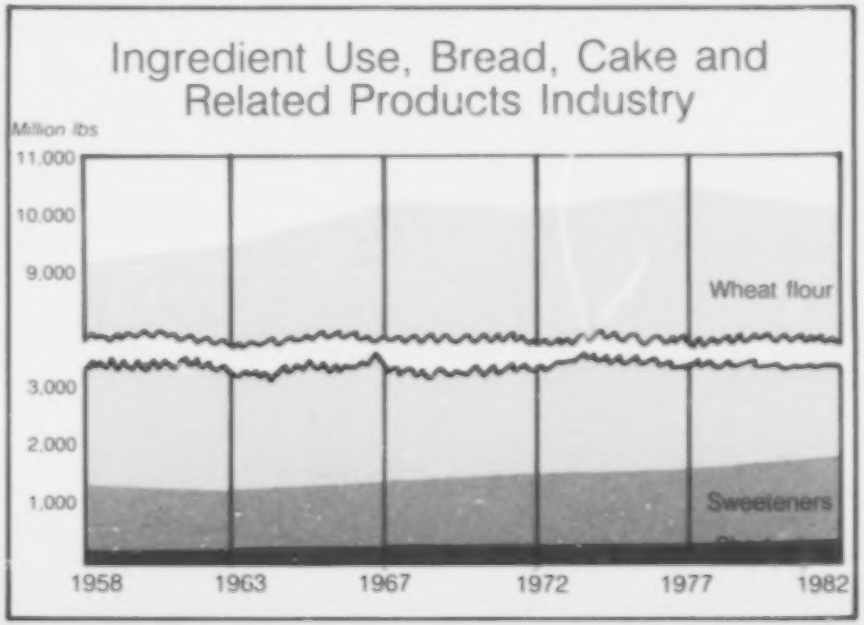
The $3,729.8-million cost for materials, ingredients, containers and supplies used by the Bread, Cake and Related Products Industry in 1982 represented 71% of the total cost of all materials and services used, which was $5,282.7 million. This total includes, in addition to materials and ingredients, the cost of resales, fuel and electricity, and contract work.

The following table breaks down the total cost of materials and services used by the Bread, Cake and Related Products Industry and Wholesale Bakeries in 1982, 1977 and 1972:

Cost of materials, 1972-82

(millions)

	Bread, Cake, Related Products			Wholesale Bakeries		
	1982	1977	1972	1982	1977	1972
Materials	$3,729.8	$2,829.1	$1,957.8	$3,307.8	$2,505.5	$1,640.4
Resales	1,286.1	938.9	605.8	1,142.8	828.3	559.1
Fuels consumed	132.7	77.3	31.0	116.9	68.7	26.3
Electricity	109.3	27.6	95.3	50.5	22.7	
Contract work	24.9	5.6	1.4	24.2	5.2	1.4
Total cost	**$5,282.7**	**$3,909.0**	**$2,623.6**	**$4,686.9**	**$3,458.2**	**$2,250.2**



Down as per cent of shipments

Cost of materials and ingredients consumed as a percentage of the industry's total value of shipments again declined in 1982. The following table shows the delivered cost of all materials and ingredients used by the industry for a series of Census years, as well as the percentage of total value of shipments these materials and ingredients represent:

	Materials consumed (millions)	Per cent of industry shipments
1982	$3,729.8	28.3%
1977	2,829.1	30.5%
1972	1,957.8	31.9%
1967	1,856.3	36.4%
1963	1,673.0	37.1%
1958	1,635.6	39.9%
1954	1,456.9	43.6%